

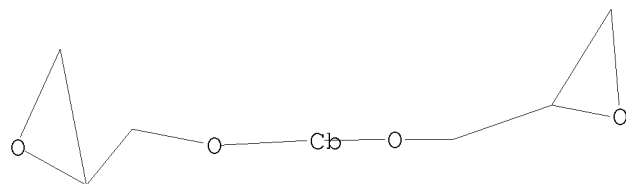
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L3 STRUCTURE UPLOADED

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L3 HAS NO ANSWERS

L3 STR



Structure attributes must be viewed using STN Express query preparation.

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FULL SEARCH INITIATED 16:05:28 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 31334 TO ITERATE

100.0% PROCESSED 31334 ITERATIONS

865 ANSWERS

SEARCH TIME: 00.00.01

L4 865 SEA SSS FUL L3

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

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FILE COVERS 1907 - 21 Dec 2008 VOL 149 ISS 26

FILE LAST UPDATED: 19 Dec 2008 (20081219/ED)

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=> s 14

L5 749 L4

=> d 1-10 bib abs hitstr

L5 ANSWER 1 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2008:1396495 CAPLUS

DN 149:535056

TI Sensitizer for cationic photoinitiators

IN Herlihy, Shaun Lawrence; Standing, Stephen Stuart; Davidson, Robert  
Stephen

PA Sun Chemical Limited, UK

SO PCT Int. Appl., 25pp.

CODEN: PIXXD2

DT Patent

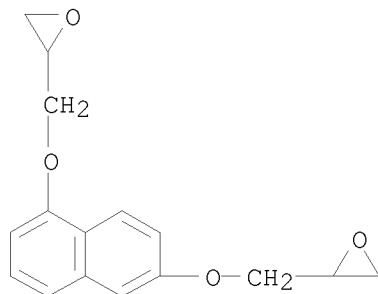
LA English

FAN.CNT 2

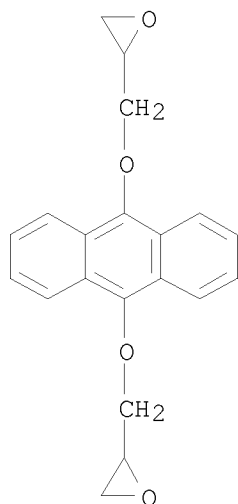
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2008139315	A2	20081120	WO 2008-IB1187	20080509
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	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	GB 2449124	A	20081112	GB 2007-9119	20070511
PRAI	GB 2007-9119	A	20070511		
AB	Polycyclic aromatic compds. having at least two conjugated aromatic rings at least one of which has a substituent comprising a cyclic carbonate group can be used as sensitizers for cationic photoinitiators, especially iodonium compds., and may also function as monomers in cationically initiated radiation curable compns., especially coating compns., such as printing inks and varnishes. A sensitizer was prepared from EPICLON HP-4032D and carbon dioxide.				
IT	131406-13-8, EPICLON HP-4032D 155665-67-1 RL: RCT (Reactant); RACT (Reactant or reagent) (sensitizer for cationic photoinitiators)				
RN	131406-13-8 CAPLUS				
CN	Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis-, homopolymer (CA INDEX NAME)				

CM 1

CRN 27610-48-6  
CMF C16 H16 O4



RN 155665-67-1 CAPLUS  
CN Oxirane, 2,2'-[9,10-anthracenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



L5 ANSWER 2 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2008:1366236 CAPLUS  
DN 149:535499  
TI Thermally conductive liquid epoxy resin underfill compositions, their  
sealing compositions, and flip-chip semiconductor devices sealed with them  
IN Asano, Masatoshi  
PA Shin-Etsu Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 18pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1  
PATENT NO. KIND DATE APPLICATION NO. DATE

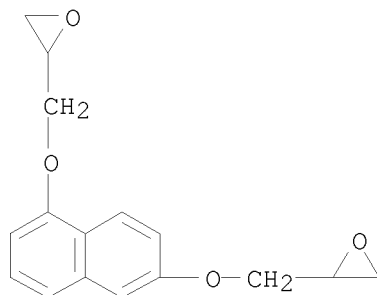
PI JP 2008274083 A 20081113 JP 2007-118717 20070427  
 PRAI JP 2007-118717 20070427  
 AB The compns. for underfills comprise (A) liquid epoxy resins, (B) curing agents, and (C) 60-90% (to total compns.) spherical alumina with average particle diameter 1-5  $\mu\text{m}$ , maximum particle diameter  $\leq 20 \mu\text{m}$ , and percentage of particles with diameter  $>10 \mu\text{m} <10\%$ . Thus, a composition containing trifunctional epoxy resin (Epikote 630H), bisphenol F epoxy resin (RE 303SL), diethyldiaminodiphenylmethane (Kayahard A-A, curing agent), and spherical alumina (DAW 03) showed good flowability in gaps and no filler sedimentation after curing.  
 IT 1075432-39-1P 1075432-42-6P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (thermally conductive liquid epoxy resin underfill compns. containing alumina with good flowability in gaps and no filler sedimentation after curing for flip-chip semiconductor devices)  
 RN 1075432-39-1 CAPLUS  
 CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis-, polymer with Epicure YH 307 and RE 303SL (CA INDEX NAME)  
 CM 1  
 CRN 312636-37-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2  
 CRN 125724-90-5  
 CMF Unspecified  
 CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3  
 CRN 27610-48-6  
 CMF C16 H16 O4



RN 1075432-42-6 CAPLUS  
 CN 4,7-Ethenoisobenzofuran-1,3-dione,  
 3a,4,5,6,7,7a-hexahydro-4-methyl-7-(1-methylethyl)-, polymer with  
 2,2'-[1,6-naphthalenediylbis(oxyethylene)]bis[oxirane], RE 303SL and  
 3a,4,7,7a-tetrahydro-4,5-dimethyl-7-(2-methyl-1-propen-1-yl)-1,3-  
 isobenzofurandione (CA INDEX NAME)

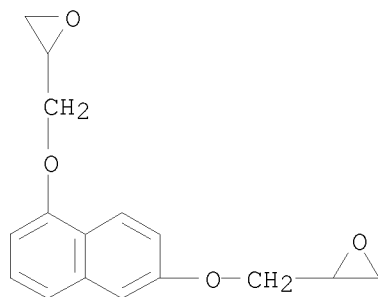
CM 1

CRN 312636-37-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

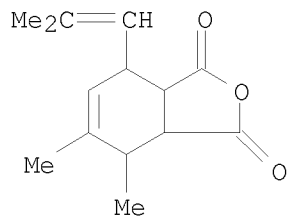
CM 2

CRN 27610-48-6  
 CMF C16 H16 O4



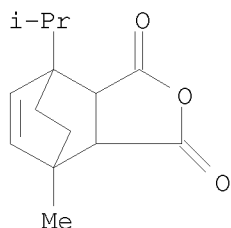
CM 3

CRN 7672-77-7  
 CMF C14 H18 O3



CM 4

CRN 3733-79-7  
 CMF C14 H18 O3



L5 ANSWER 3 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2008:1358371 CAPLUS  
 DN 149:535029  
 TI Sensitizer for cationic photoinitiators  
 IN Herlihy, Shaun Lawrence; Davidson, Robert Stephen  
 PA Sun Chemical Limited, UK  
 SO Brit. UK Pat. Appl., 28pp.  
 CODEN: BAXXDU  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2449124	A	20081112	GB 2007-9119	20070511
	WO 2008139315	A2	20081120	WO 2008-IB1187	20080509
	W:				
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	CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,				
	FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,				
	KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,				
	ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,				
	PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM,				
	TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,				
	IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK,				
	TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,				
	TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,				
	AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	GB 2007-9119	A	20070511		

AB Polycyclic aromatic compds. having at least two conjugated aromatic rings at least one of which has a substituent comprising a cyclic carbonate group can be used as sensitizers for cationic photoinitiators, especially iodonium compds., and may also function as monomers in cationically initiated radiation curable compns., especially coating compns., such as printing inks and

varnishes. A sensitizer was prepared from EPICLON HP-4032D and carbon dioxide.

IT 131406-13-8, EPICLON HP-4032D 155665-67-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (sensitizer for cationic photoinitiators)

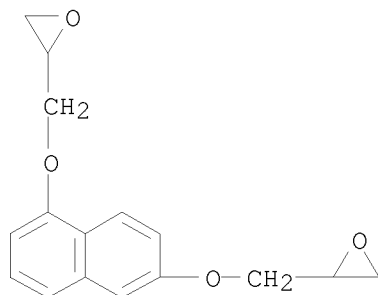
RN 131406-13-8 CAPLUS

CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis-, homopolymer (CA INDEX NAME)

CM 1

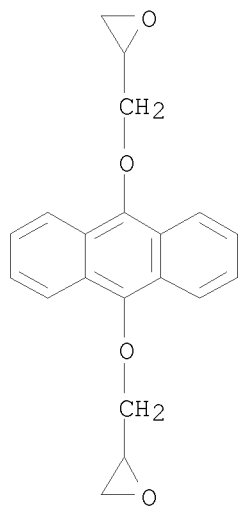
CRN 27610-48-6

CMF C16 H16 O4



RN 155665-67-1 CAPLUS

CN Oxirane, 2,2'-[9,10-anthracenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2008:1337427 CAPLUS

DN 149:514402

TI Fire-resistant liquid epoxy resin compositions and semiconductor devices  
sealed with them

IN Sumida, Kazumasa; Tomiyoshi, Kazutoshi

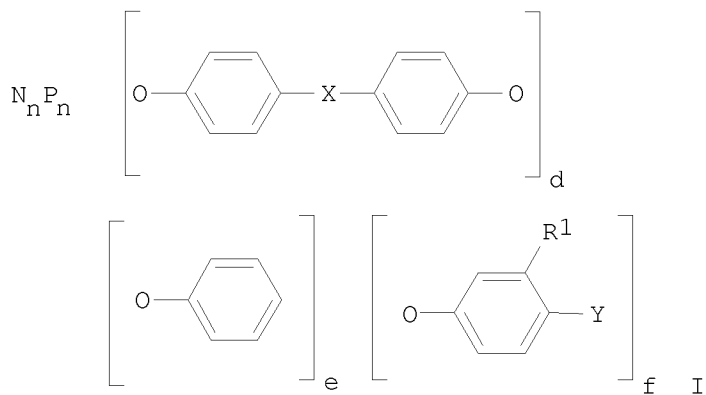
PA Shin-Etsu Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19pp.

CODEN: JKXXAF

DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2008266512	A	20081106	JP 2007-114142	20070424
PRAI	JP 2007-114142		20070424		
GI					



AB Title Br compound- and Sb compound-free compns., useful for potting semiconductor devices, comprise (A) liquid epoxy resins, (B) curing agents, (C) inorg. fillers, (D) Zn molybdate supported by inorg. fillers, and (E) phosphazenes I [X = single bond, CH<sub>2</sub>, CMe<sub>2</sub>, SO<sub>2</sub>, S, O, O(CO)O; Y = OH, SH, NH<sub>2</sub>; R<sup>1</sup> = C1-4 alkyl, alkoxy, NH<sub>2</sub>, NR<sub>2</sub>R<sub>3</sub>, SR<sub>2</sub>; R<sub>2</sub>, R<sub>3</sub> = H, C1-4 alkyl; 0 ≤ d ≤ 0.25n; 0 ≤ e < 2n; 0 ≤ f ≤ 2n; 2d + e + f = 2n; n = 3-1000] at weight ratio (A + B) 100, C 400-800, D 5-40, E 5-40, and (D + E) 10-40 parts. Thus, a composition containing Epikote 630H (trifunctional epoxy resin) 20, HP 4032D (naphthalene-type epoxy resin) 20, YH 307 (acid anhydride) 30, MH 700 (acid anhydride) 30, fused SiO<sub>2</sub> 700, Kemgard 911C (Zn molybdate supported by talc) 15, and I (R<sup>1</sup> = Me, Y = OH, n = 3, d, e = 0, f = 6) 15 parts was molded to give a test piece showing good fire and moisture resistance.

IT 1073593-93-7P, Epikote 630H-HP 4032D-MH 700-YH 307 copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fire- and moisture-resistant liquid epoxy resin compns. for potting semiconductor devices)

RN 1073593-93-7 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-5-methyl-, polymer with Epicure YH 307, hexahydro-1,3-isobenzofurandione, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] and N-[4-(2-oxiranylethoxy)phenyl]-N-(2-oxiranylethyl)-2-oxiranemethanamine (CA INDEX NAME)

CM 1

CRN 125724-90-5

CMF Unspecified

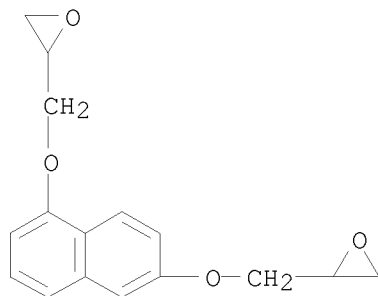
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 27610-48-6

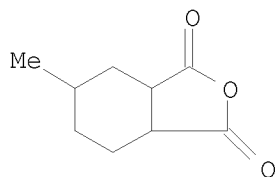
CMF C16 H16 O4



CM 3

CRN 19438-60-9

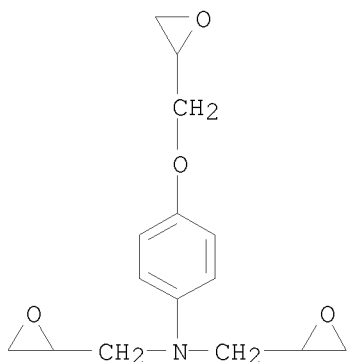
CMF C9 H12 O3



CM 4

CRN 5026-74-4

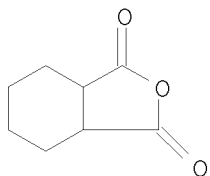
CMF C15 H19 N O4



CM 5

CRN 85-42-7

CMF C8 H10 O3



L5 ANSWER 5 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2008:1310149 CAPLUS  
 DN 149:504194  
 TI Liquid epoxy resin composition for semiconductor device  
 IN Asano, Masatoshi  
 PA Shin-Etsu Chemical Co., Ltd., Japan  
 SO U.S. Pat. Appl. Publ., 10pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20080265438	A1	20081030	US 2008-109163	20080424
	JP 2008274080	A	20081113	JP 2007-118607	20070427
PRAI	JP 2007-118607	A	20070427		

AB A liquid epoxy resin composition comprising (A) a liquid epoxy resin, (B) a curing agent, (C) an inorg. filler, (D) a hygroscopic agent, and optionally, (E) a fluxing agent has the advantages of void-free fill, shelf stability and solder connection, and is thus advantageously used in the fabrication of flip chip semiconductor devices by the no-flow method.

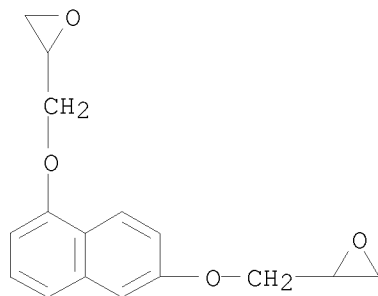
IT 131406-13-8, Epiclone HP4032D

RL: TEM (Technical or engineered material use); USES (Uses)  
 (liquid epoxy resin composition for semiconductor device)

RN 131406-13-8 CAPLUS  
 CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis-, homopolymer (CA INDEX NAME)

CM 1

CRN 27610-48-6  
 CMF C16 H16 O4



L5 ANSWER 6 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2008:1301999 CAPLUS

DN 149:494690

TI Adhesives containing negative expansion coefficient-having fillers for electronic parts

IN Masahara, Kazuyuki

PA Sekisui Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2008260892	A	20081030	JP 2007-106157	20070413
PRAI	JP 2007-106157		20070413		

AB Title adhesives contain (A) fillers with neg. expansion coefficient and (B) binders containing adhesive compds. Thus, 30 volume parts ZWP [Zr<sub>2</sub>(WO<sub>4</sub>)(PO<sub>4</sub>)<sub>2</sub>, expansion coefficient -3 ppm/°] was mixed with 100 volume parts binder containing G 2050M (epoxy-containing acrylic polymer), EXA 7200HH (dicyclopentadiene-type epoxy resin), HP 4032D (naphthalene-type epoxy resin), and YH 309 (acid anhydride), diluted with Me Et ketone, applied on a release film, and dried to give a sheet adhesive. A wafer was laminated on the sheet adhesive and heat-treated at 170° to give a test piece showing warpage 130 μm.

IT 1070965-90-0P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (adhesives containing neg. expansion coefficient-having fillers for bonding electronic parts with low warpage)

RN 1070965-90-0 CAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with Epicure YH 309,

EXA 7200H, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] and  
2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

CM 1

CRN 178234-45-2

CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 125725-80-6

CMF Unspecified

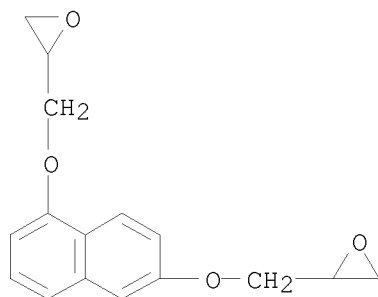
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 27610-48-6

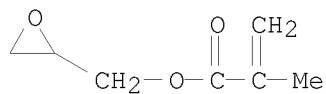
CMF C16 H16 O4



CM 4

CRN 106-91-2

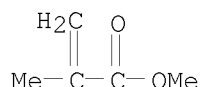
CMF C7 H10 O3



CM 5

CRN 80-62-6

CMF C5 H8 O2



L5 ANSWER 7 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2008:1279392 CAPLUS

DN 149:484525

TI Dielectric packaging films, electronic apparatuses therewith, and manufacture thereof

IN Maenaka, Hiroshi; Aoyama, Takuji; Watanabe, Takashi

PA Sekisui Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 21pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2008258429	A	20081023	JP 2007-99491	20070405
PRAI	JP 2007-99491		20070405		

AB The films contain curable compds., curing agents, high-mol.-weight polymers, and inorg. fillers, and satisfy storage modulus at 30° (E1) (1 + 104)-(1 + 106) Pa, that at ≥30° (E2) (1 + 102)-(3 + 104) Pa, and E1/E2 2-500. The curable compds. may be epoxy resins having polycyclic hydrocarbon skeleton. Electronic device manufacturing process as follows is also claimed; covering electronic device peripheries with the dielec. films, exposing the resulting layers to high-d. actinic rays, filling the resulting holes with wiring materials (A), and forming wiring patterns on the layer surface while interconnecting them with A. The films give uniformly covered finish to the electronic devices.

IT 131406-13-8, HP 4032D 154445-49-5, Epiclon HP 4700

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(easy-to-handle dielec. films containing polycyclic skeleton-containing epoxy resins and for electronic device packaging)

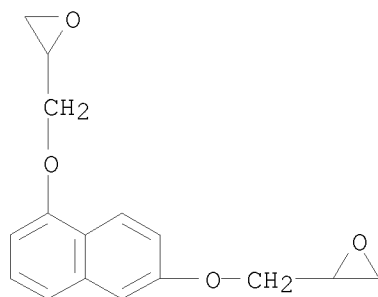
RN 131406-13-8 CAPLUS

CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis-, homopolymer (CA INDEX NAME)

CM 1

CRN 27610-48-6

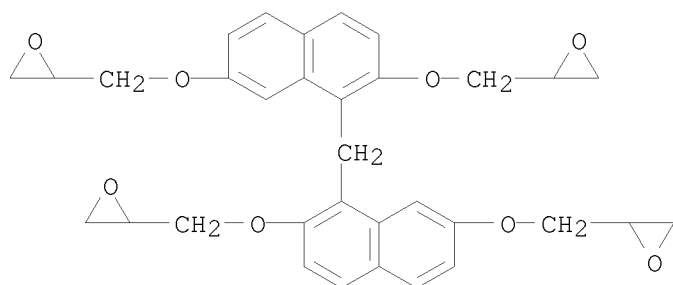
CMF C16 H16 O4



RN 154445-49-5 CAPLUS  
 CN Oxirane, 2,2',2'',2'''-[methylenebis[1,2,7-naphthalenetriylbis(oxymethylene)]]tetrakis-, homopolymer (CA INDEX NAME)

CM 1

CRN 146794-56-1  
 CMF C33 H32 O8



L5 ANSWER 8 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2008:1276755 CAPLUS  
 DN 149:472277  
 TI Thermosetting polyimide compositions with good heat resistance, electrical performance, mechanical properties, and dimensional stability  
 IN Ichinose, Hidetoshi; Ishida, Hideyuki; Murakami, Koichi  
 PA DIC Corporation, Japan  
 SO Jpn. Kokai Tokkyo Koho, 43pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2008255337	A	20081023	JP 2008-56267	20080306
PRAI	JP 2007-63318	A	20070313		

AB The thermosetting polyimide compns. contain (A) polyimides having structures NHCO2XO2CNH and/or OHXO2CNH (X = residue obtained by removing 2 phenolic OH from phenolic compds. having ≥2 phenolic OH), (B) epoxy resins, and (C) phenoxy resins, and optionally, (D) crosslinking catalysts

and (E) urethanization catalysts. Thus, reacting ethylene glycol bis(anhydrotrimellitate) 98.4, bisphenol S 40, diphenylmethane diisocyanate 40, and hexamethylene diisocyanate 26.9 g in dimethylacetamide (DMAC) at 80° then at 120° and diluting with DMAC gave a 55-solid polyimide solution with viscosity at 25° 100 Pa·s, 50 parts of which was mixed with Epiclon N 680 (cresol novolak epoxy resin), 25 parts Epiclon N 850-bisphenol S copolymer (phenoxy resin), 5 parts 2-ethyl-4-methylimidazole, and 5 parts dibutyltin acetate to give a thermosetting polyimide composition giving thermoset (200°) films on tin substrates showing permittivity  $\epsilon$  2.4,  $\tan\delta$  7.5 + 100, and low coefficient of thermal expansion.

IT 952685-98-2P, Dihydroxynaphthalene-Epiclon HP 4032D copolymer  
 952686-01-0P, Bisphenol S-Epiclon HP 4032D copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (thermosetting polyimide compns. with good heat resistance, elec. performances, mech. properties, and dimensional stability)

RN 952685-98-2 CAPLUS

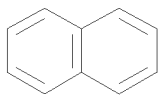
CN Naphthalenediol, polymer with 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] (CA INDEX NAME)

CM 1

CRN 28346-70-5

CMF C10 H8 O2

CCI IDS

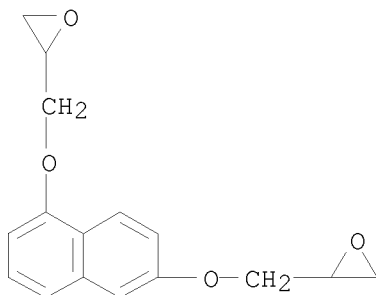


2 ( D1-OH )

CM 2

CRN 27610-48-6

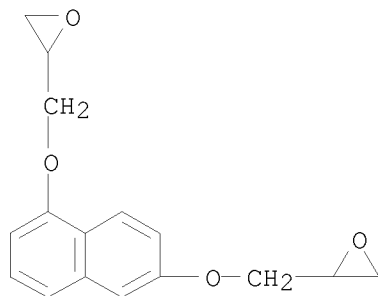
CMF C16 H16 O4



RN 952686-01-0 CAPLUS  
 CN Phenol, 4,4'-sulfonylbis-, polymer with  
 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] (CA INDEX NAME)

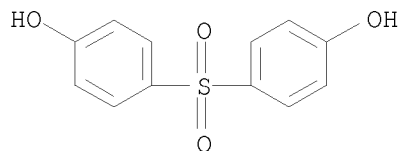
CM 1

CRN 27610-48-6  
 CMF C16 H16 O4



CM 2

CRN 80-09-1  
 CMF C12 H10 O4 S



L5 ANSWER 9 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2008:1247570 CAPLUS  
 DN 149:472255  
 TI Curatives for epoxy compositions  
 IN Dershem, Stephen  
 PA Designer Molecules, Inc., USA  
 SO PCT Int. Appl., 61pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2008124797	A1	20081016	WO 2008-US59804	20080409
	W:				
	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,				
	CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,				
	FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,				
	KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,				

ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,  
 PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM,  
 TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW  
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,  
 IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK,  
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,  
 TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,  
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

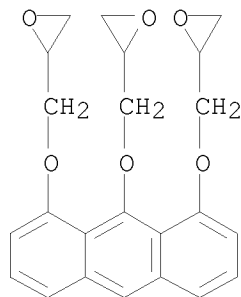
PRAI US 2007-922412P P 20070409  
 US 2007-930166P P 20070515

AB The invention provides epoxy and oxetane compns. including the acyloxy and N-acyl curing agents described herein. Use of invention curing agents result in cured adhesive compns. with remarkably increased adhesion and reduced hydrophilicity when compared to resins cured with other types of curing agents. Furthermore, the curatives of this invention do not interfere with free-radical cure and are thus suited for use in hybrid cure thermoset compns.

IT 186885-46-1  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (curatives for epoxy compns.)

RN 186885-46-1 CAPLUS

CN Oxirane, 2,2',2''-[1,8,9-anthracenetriyltris(oxymethylene)]tris- (9CI)  
 (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2008:1247209 CAPLUS

DN 149:472253

TI Thermosetting polyurethane resin compositions with good heat resistance, electrical and mechanical properties, and dimensional stability

IN Ichinose, Hidetoshi; Ishida, Hideyuki; Murakami, Koichi

PA DIC Corporation, Japan

SO Jpn. Kokai Tokkyo Koho, 35pp.

CODEN: JKXXAF

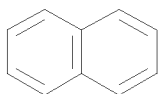
DT Patent

LA Japanese

FAN.CNT 1

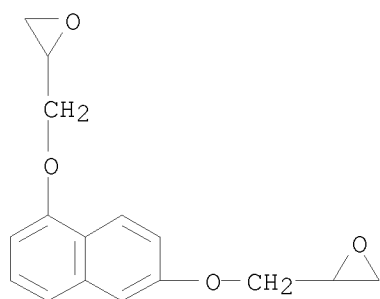
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----

PI JP 2008248240 A 20081016 JP 2008-56266 20080306  
 PRAI JP 2007-57130 A 20070307  
 AB Title compns. comprise (A) polyurethane resins having repeating units of NHC(O)XOC(O)NH and/or HOXOC(O)NH, (B) epoxy resins, and (C) phenoxy resins, wherein X = residue of phenolic compds. having  $\geq 2$  phenolic hydroxy groups. Thus, 0.4 mol bisphenol F and 0.3 mol TDI were polymerized in  $\gamma$ -butyrolactone at 80° for 5 h to give a 60%-solids polyurethane solution, 50 parts of which was mixed with a cresol novolak epoxy resin 25, a phenoxy resin obtained from Epiclon 850 and bisphenol S 25, 2-ethyl-4-methylimidazole 0.5, and dibutyltin acetate 0.5 parts to give a composition, which was applied on a substrate and cured at 200° for 1 min, showing dielec. constant 2.50,  $\tan \delta$  7.8 + 102, glass transition temperature 195°, linear thermal expansion coefficient 65 ppm at 50-60° and 95 ppm at 110-120°, and good storage stability (composition).  
 IT 952685-98-2P 952686-01-0P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (blend with epoxy polyurethane; thermosetting polyurethane resin compns. with good heat resistance, elec. and mech. properties, and dimensional stability)  
 RN 952685-98-2 CAPLUS  
 CN Naphthalenediol, polymer with 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] (CA INDEX NAME)  
 CM 1  
 CRN 28346-70-5  
 CMF C10 H8 O2  
 CCI IDS

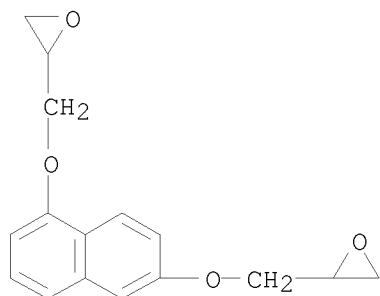


2 ( D1-OH )

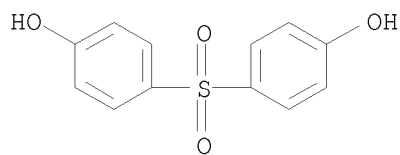
CM 2  
 CRN 27610-48-6  
 CMF C16 H16 O4



RN 952686-01-0 CAPLUS  
 CN Phenol, 4,4'-sulfonylbis-, polymer with  
 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] (CA INDEX NAME)  
 CM 1  
 CRN 27610-48-6  
 CMF C16 H16 O4



CM 2  
 CRN 80-09-1  
 CMF C12 H10 O4 S

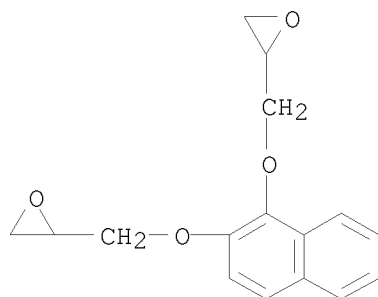


=> d 780-794 bib abs hitstr  
 749 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET SIZE  
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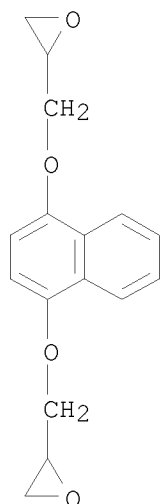
L5 ANSWER 730 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1977:585535 CAPLUS  
 DN 87:185535  
 OREF 87:29317a,29320a  
 TI Heat-resistant poly(vinyl chloride) compositions  
 IN Minagawa, Motonobu; Sekiguchi, Tetsuo; Tsuruga, Koji  
 PA Adeka Argus Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 52078257	A	19770701	JP 1975-155621	19751225
	JP 59028228	B	19840711		
PRAI	JP 1975-155621	A	19751225		

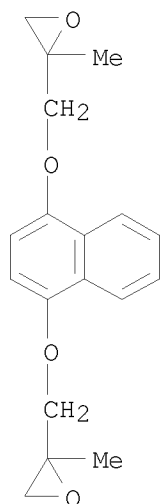
AB Heat-resistant PVC [9002-86-2] (optionally containing ABS [9003-56-9]) compns. contained 0.01-5 phr metal salt(s) and 0.01-5 phr polyol adduct with diglycidyl ether of catechol, resorcinol, hydroquinone, or naphthalenediol. Thus, a solution of 13.0 g pentaerythritol (I) [115-77-5] in 30 g water was treated with 0.3 g KOH, heated to 80°, heated with a solution of 11.6 g hydroquinone diglycidyl ether (II) [2425-01-6] in 30 g dioxane, and refluxed for 16 h to give 1:2 II-I adduct (III). A PVC composition containing DOP 50, zinc octoate [557-09-5] 1.0, barium nonylphenate [28987-17-9] 1.0, stearic acid 0.5, and III 0.5 phr had heat resistance (190°) 105 min, compared with 45 min for a control not containing III and 60 min for a control containing I in place of III.  
 IT 34899-05-3D, reaction products with mannitol 34899-13-3D, reaction products with polyols 64777-23-7D, reaction products with pentaerythritol  
 RL: USES (Uses)  
 (heat stabilizers containing metal salts and, for PVC)  
 RN 34899-05-3 CAPLUS  
 CN Oxirane, 2,2'-[1,2-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 34899-13-3 CAPLUS  
 CN Oxirane, 2,2'-[1,4-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)

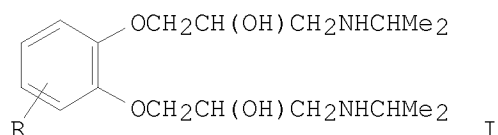


RN 64777-23-7 CAPLUS  
 CN Oxirane, 2,2'-[1,4-naphthalenediylbis(oxymethylene)]bis[2-methyl- (9CI)  
 (CA INDEX NAME)



L5 ANSWER 731 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1977:545538 CAPLUS  
 DN 87:145538  
 OREF 87:22925a,22928a  
 TI  $\beta$ -Adrenoceptor studies. 2. Effects of alkyl substitution on  
 $\beta$ -adrenoceptor blocking, antiarrhythmic, and local anesthetic  
 activities of 1,1'-(o-phenylenedioxy)bis(3-isopropylamino-2-propanol)  
 AU Zaagsma, Johan; Nauta, Wijbe T.  
 CS Dep. Med. Chem., Vrije Univ., Amsterdam, Neth.

SO Journal of Medicinal Chemistry (1977), 20(4), 527-31  
 CODEN: JMCMAR; ISSN: 0022-2623  
 DT Journal  
 LA English  
 GI

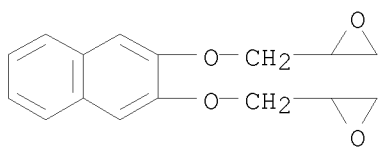


AB Four title compds. (I; R = 3- or 4-Me, 3- or 4-iso-Pr) and the naphthalene-2,3- analog and 5,6,7,8-tetrahydronaphthalene-2,3- analog [34898-94-7] were prepared by the reaction of the appropriate catechol with epichlorohydrin followed by amination. Compared to the parent compound (I, R = H), tracheal and right atrial  $\beta$ -adrenoceptor blocking activity were markedly decreased by substitution in position 3, while substitution in other positions lowered affinity to cardiac  $\beta$ -adrenoceptors, but only marginally affected potency on tracheal receptors. Antagonism to ouabain-induced arrhythmias and local anesthetic activity increased with aromatic substitution. All the drugs were cardiodepressant. Stepwise multiple regression anal. using partition coeffs., steric factors, dissociation consts., and substituent consts. were used to correlate substitution with biol. activity.

IT 34898-97-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction with isopropylamine)

RN 34898-97-0 CAPLUS

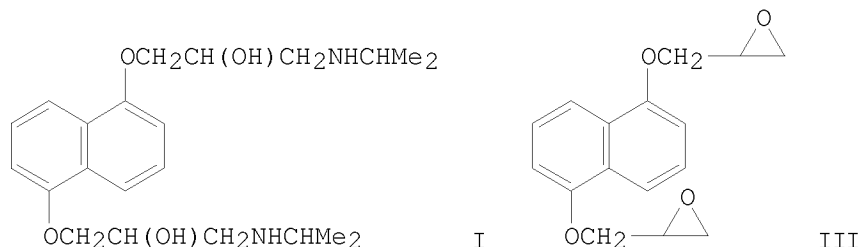
CN Oxirane, 2,2'-[2,3-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



L5 ANSWER 732 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1977:121050 CAPLUS  
 DN 86:121050  
 OREF 86:19107a,19110a  
 TI Naphthylenebis(oxyalkylene) amino alcohols  
 IN Nauta, Wijbe T.  
 PA Neth.  
 SO U.S., 6 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3996284	A	19761207	US 1974-459721	19740410
PRAI	US 1971-127381	A2	19710323		
GI					



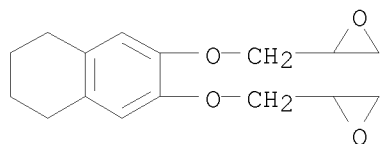
AB The title compds., e.g., I, useful as anesthetics and antiarrhythmics, were prepared via sequential reactions of naphthalenediols with epichlorohydrin (II) and amines. Thus, treating 1,8-naphthalenediol with II and NaOH gave III, which with Me<sub>2</sub>CHNH<sub>2</sub> gave I.

IT 34898-93-6P 34898-97-0P 34899-01-9P  
34899-05-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with isopropylamine)

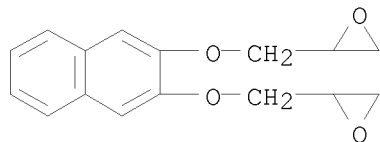
RN 34898-93-6 CAPLUS

CN Oxirane, 2,2'-[(5,6,7,8-tetrahydro-2,3-naphthalenediyl)bis(oxymethylene)]bis- (CA INDEX NAME)



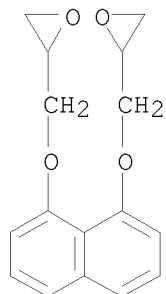
RN 34898-97-0 CAPLUS

CN Oxirane, 2,2'-[2,3-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



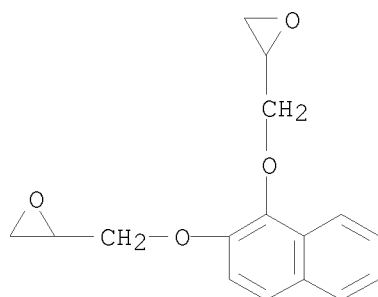
RN 34899-01-9 CAPLUS

CN Oxirane, 2,2'-[1,8-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 34899-05-3 CAPLUS

CN Oxirane, 2,2'-[1,2-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



L5 ANSWER 733 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1975:74414 CAPLUS

DN 82:74414

OREF 82:11907a,11910a

TI Reactive vat dyes

AU Korotenko, T. A.; Rudkevich, M. I.

CS USSR

SO Vestnik Khar'kovskogo Politekhnikeskogo Instituta (1973), 76, 29-35

CODEN: VEPIBL; ISSN: 0453-7998

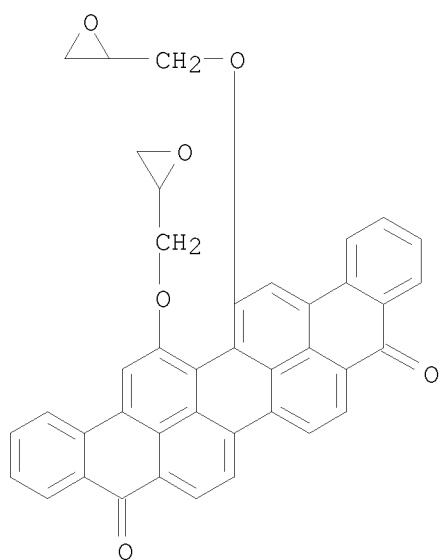
DT Journal

LA Ukrainian

GI For diagram(s), see printed CA Issue.

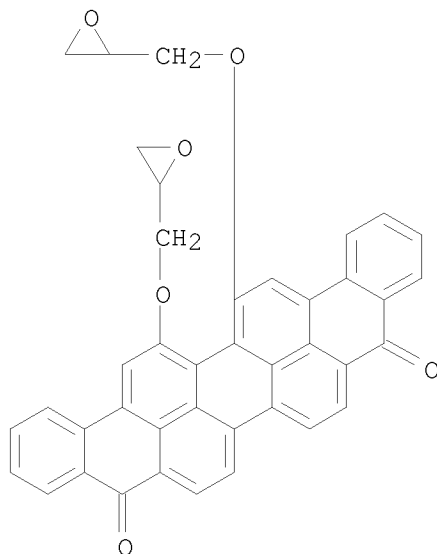
AB Ten reactive vat dyes (I-II) containing glycidyl (Q) groups were prepared by reaction of epichlorohydrin [106-89-8] with perylene and dibenzanthrone derivs. For example, reaction of I(R = H, R1 = OH) mono-Na salt [53683-12-8] with qH in the presence of piperidine-HCl gave I (H = H, R1 = OQ) [19586-90-4], which dyed cotton from a vat in fast green shades that changed to violet under the influence of HOAc. Also prepared were I (R = OQ, C6H4NH2-p, C6H4OQ-p, C6H4(C6H4OQ-p)-p, Q, C6H4NHQ-p; R1 = H, OQ), II (R= OQ, NHQ), and dibromobis(glycidylloxy)dibenzanthrone [

53701-14-7].  
 IT 53683-09-3 53701-14-7  
 RL: USES (Uses)  
 (reactive vat dye, for cotton)  
 RN 53683-09-3 CAPLUS  
 CN Anthra[9,1,2-cde]benzo[rst]pentaphene-5,10-dione,  
 16,17-bis(oxiranylmethoxy)- (9CI) (CA INDEX NAME)



RN 53701-14-7 CAPLUS  
 CN Anthra[9,1,2-cde]benzo[rst]pentaphene-5,10-dione,  
 dibromo-16,17-bis(oxiranylmethoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

2 ( D1-Br )

L5 ANSWER 734 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1975:31023 CAPLUS

DN 82:31023

OREF 82:4929a,4932a

TI 2-[2-Hydroxy-3-(aminopropyl)-1-yloxy]-1,6-difluoro-and-1,6-methano[10]annulenes and their salts

IN Nelson, Peter H.; Untch, Karl G.; Fried, John H.

PA Syntex Corp.

SO U.S., 16 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3758583	A	19730911	US 1971-108611	19710121
PRAI	US 1971-108611	A	19710121		

GI For diagram(s), see printed CA Issue.

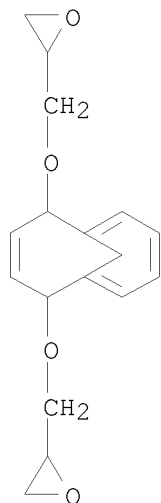
AB 1,6-Methano-[10] annulene derivs. I (R = F, H; R1 = H, Me2CH, Me; R2 = Me3C, Me2CH, cyclohexyl) and their ring-substituted derivs. were useful as  $\beta$ -adrenergic blocking agents. Thus, 1,6-methano[10]annulene was refluxed with Pb(OAc)4 in C6H6 to give II (R = Ac), which reacted with glycidol to give II (R = glycidyl). KOCMe3 in glyme was added to II (R = glycidyl), and the product was treated with Me2CHNH2 to give I (R = R1 = H, R2 = Me2CH).

IT 53147-43-6P 53147-53-8P 53187-35-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

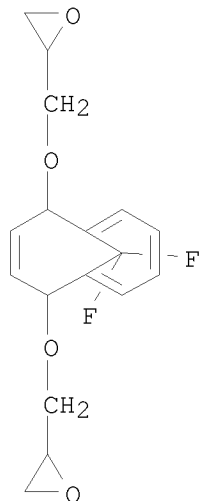
RN 53147-43-6 CAPLUS

CN Oxirane, 2,2'-[bicyclo[4.4.1]undeca-3,6,8,10-tetraene-2,5-diylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



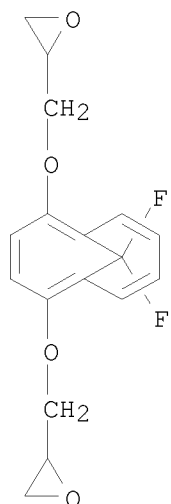
RN 53147-53-8 CAPLUS

CN Oxirane, 2,2'-[(11,11-difluorobicyclo[4.4.1]undeca-3,6,8,10-tetraene-2,5-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)

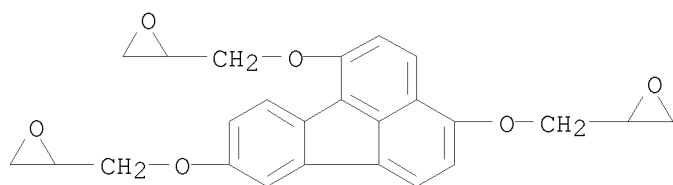


RN 53187-35-2 CAPLUS

CN Oxirane, 2,2'-[(11,11-difluorobicyclo[4.4.1]undeca-1,3,5,7,9-pentaene-2,5-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



L5 ANSWER 735 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1974:554248 CAPLUS  
 DN 81:154248  
 OREF 81:24013a,24016a  
 TI Effect of hydroxy derivatives of fluoranthene on the stability of the bond  
 in rubber-cord systems  
 AU Onishchenko, Z. V.; Krasnobryzhaya, R. A.; Blokh, G. A.; Kulik, A. P.;  
 Shenbor, M. I.; Kutyanina, V. S.  
 CS Dnepropetr. Khim.-Tekhnol. Inst., Dnepropetrovsk, USSR  
 SO Voprosy Khimii i Khimicheskoi Tekhnologii (1973), 31, 44-9  
 CODEN: VKCAJ; ISSN: 0321-4095  
 DT Journal  
 LA Russian  
 AB The adhesion of BSK and SKI-3 rubber to cord bonded with SKD-1 or  
 DVMP-10kh adhesives increased following modification with  
 4,7,12-trihydroxyfluoranthene (I) [34163-42-3] or  
 4,7,12-tris(glycidyloxy)fluoranthene (II) [52767-58-5]. The  
 effectiveness of the additives increased with increasing content of OH  
 groups in the additives. II was superior to I in improving the adhesion  
 of DMVP-10kh latex, particularly at elevated temperature  
 IT 52767-58-5  
 RL: USES (Uses)  
 (synthetic latexes modified by, for bonding of synthetic rubbers to  
 fibers)  
 RN 52767-58-5 CAPLUS  
 CN Oxirane, 2,2',2''-[1,4,8-fluoranthenetriyltris(oxymethylene)]tris- (9CI)  
 (CA INDEX NAME)



L5 ANSWER 736 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1974:505095 CAPLUS

DN 81:105095

OREF 81:16611a,16614a

TI 5,8-Dihydro-5,8-methanonaphthalenes with cardiovascular action

IN Marx, Michael; Li, Tsung-Tee

PA Syntex (U.S.A.) Inc.

SO Ger. Offen., 74 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2362877	A1	19740620	DE 1973-2362877	19731218
	GB 1436860	A	19760526	GB 1973-57171	19731210
	AU 7363543	A	19750612	AU 1973-63543	19731212
	FR 2210412	A1	19740712	FR 1973-45105	19731217
	JP 50046652	A	19750425	JP 1973-141738	19731217
PRAI	US 1972-316070	A	19721218		

GI For diagram(s), see printed CA Issue.

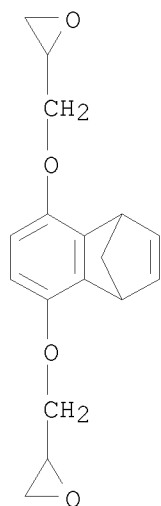
AB Dihydro-methanonaphthalenes I (R = e.g., Me, Et, Me<sub>3</sub>C; R<sub>1</sub> = e.g., MeS, AcO, CH<sub>2</sub>:CHCH<sub>2</sub>O, HO, CN) having cardiovascular activity (no data) were prepared from II (R = H) which reacted with epibromohydrin to give II (R = glycidyl), which reacted Me<sub>3</sub>CNH<sub>2</sub> to give I (R = Me<sub>3</sub>C, R<sub>1</sub> = OH). Reaction of this product with HCHO in EtOH, then with Ac<sub>2</sub>O gave I (R = Me<sub>3</sub>C, R<sub>1</sub> = AcO).

IT 53307-91-8P

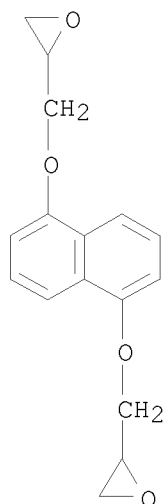
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 53307-91-8 CAPLUS

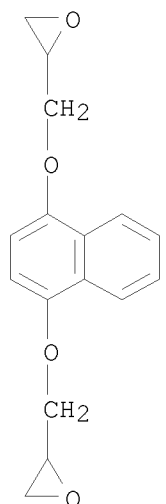
CN Oxirane, 2,2'-[(1,4-dihydro-1,4-methanonaphthalene-5,8-diyl)bis(oxymethylene)]bis- (CA INDEX NAME)



L5 ANSWER 737 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1974:458143 CAPLUS  
 DN 81:58143  
 OREF 81:9214h,9215a  
 TI  $\beta$ -Adrenoceptor studies. 1. In vitro  $\beta$ -adrenergic blocking, antiarrhythmic, and local anesthetic activities of a new series of aromatic bis(2-hydroxy-3-isopropylaminopropyl) ethers  
 AU Zaagsma, J.; Nauta, W. Th.  
 CS Dep. Med. Chem., Vrije Univ., Amsterdam, Neth.  
 SO Journal of Medicinal Chemistry (1974), 17(5), 507-13  
 CODEN: JMCMAR; ISSN: 0022-2623  
 DT Journal  
 LA English  
 AB Ten title compds., prepared by the etherification of the appropriate dihydroxyarene with epichlorohydrin [106-89-8], followed by amination with isopropylamine [75-31-0], were tested in vitro for  $\beta$ -adrenergic blocking activity, antagonism of arrhythmia, and anesthetic activity. None of the compds. were more active than propranolol (I) [525-66-6]. The naphthyl diethers had more antiarrhythmic and anesthetic activity than the phenyl diethers. The relation of activity to structure and partition coefficient was discussed.  
 IT 27610-47-5  
 RL: RCT (Reactant); RACT (Reactant or reagent) (amination of)  
 RN 27610-47-5 CAPLUS  
 CN Oxirane, 2,2'-[1,5-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



IT 34899-13-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 34899-13-3 CAPLUS  
 CN Oxirane, 2,2'-[1,4-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX  
 NAME)



L5 ANSWER 738 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1972:34017 CAPLUS  
 DN 76:34017  
 OREF 76:5507a,5510a  
 TI 1,1'-(Naphthylenedioxy)bis-[3-(isopropylamino)-2-propanol]dihydrochlorides  
 and tetrahydronaphthylenedioxy analogs  
 IN Nauta, Wijbe T.

PA N. V. Koninklijke Pharmaceutische Fabrieken voorheen Brocades-Stheeman en  
Pharmacia  
SO Ger. Offen., 23 pp.  
CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	DE 2114019	A	19711104	DE 1971-2114019	19710323
	GB 1307903	A	19730221	GB 1970-14345	19700324
	BE 764721	A1	19710923	BE 1971-101319	19710323
	NL 7103907	A	19710928	NL 1971-3907	19710323
	FR 2085739	A1	19711231	FR 1971-10436	19710324
	FR 2085739	A5	19711231		
PRAI	GB 1970-14345	A	19700324		
	GB 1970-14347	A	19700324		

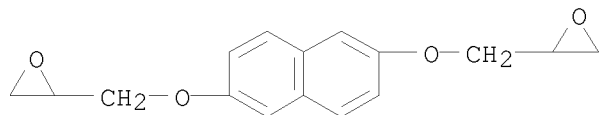
AB Seven title compds. (iso-PrNHCH<sub>2</sub>CH(OH)-CH<sub>2</sub>O)2X.2HCl (I)  
(X=5,6,7,8-tetrahydro-2,3-naphthylene, 1,8-, 1,2-, 1,4-, 1,5-, and  
2,6-naphthylene) with antiarrhythmic,  $\beta$ -sympatholytic, and local  
anesthetic activity were prepared e.g. from (ClCH<sub>2</sub>CH(OH)CH<sub>2</sub>O)2X (II) and  
excess iso-PrNH<sub>2</sub> (III) in a sealed tube or from the corresponding  
1,1'-(naphthylenedioxy)bis(2,3-epoxypropane) (IV) and III. II and IV were  
prepared by reaction of X(OH)<sub>2</sub> with epichlorohydrin in the presence of NaOH  
or piperidine under N. Thus, aqueous NaOH was added to a solution of  
1,8-dihydroxynaphthalene in epichlorohydrin under N and the mixture stirred  
16 hr at 80° and 24 hr at 100° to give  
1,1'-(naphthylene-1,8-dioxy)bis(2,3-epoxypropane) which was heated with  
III in C<sub>6</sub>H<sub>6</sub> 20 hr at 80° and subsequently treated with HCl to give  
I (X=1,8-naphthylene).

IT 7327-24-4P 27610-47-5P 34898-93-6P  
34898-97-0P 34899-01-9P 34899-05-3P  
34899-09-7P 34899-13-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

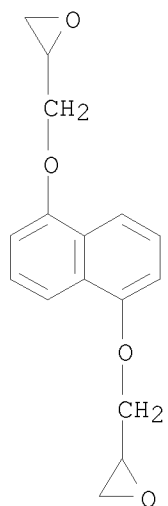
RN 7327-24-4 CAPLUS

CN Oxirane, 2,2'-[2,6-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)

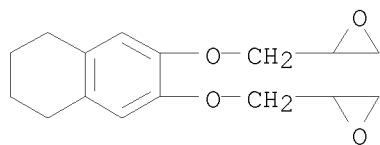


RN 27610-47-5 CAPLUS

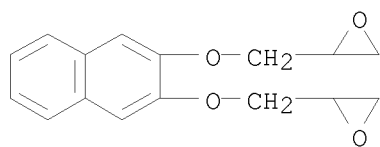
CN Oxirane, 2,2'-[1,5-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



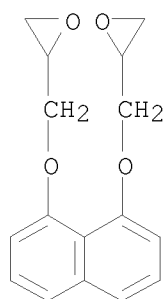
RN 34898-93-6 CAPLUS  
 CN Oxirane, 2,2'-[(5,6,7,8-tetrahydro-2,3-naphthalenediyl)bis(oxymethylene)]bis- (CA INDEX NAME)



RN 34898-97-0 CAPLUS  
 CN Oxirane, 2,2'-[2,3-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)

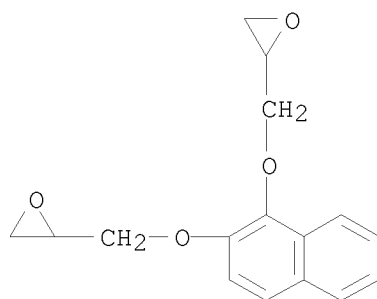


RN 34899-01-9 CAPLUS  
 CN Oxirane, 2,2'-[1,8-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



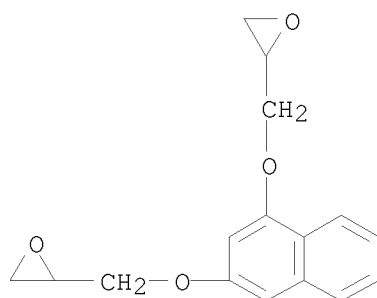
RN 34899-05-3 CAPLUS

CN Oxirane, 2,2'-[1,2-naphthalenediylbis(oxyethylene)]bis- (9CI) (CA INDEX NAME)



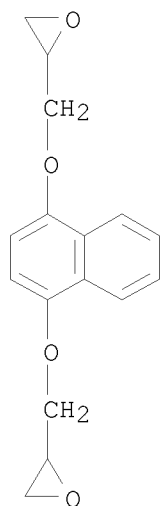
RN 34899-09-7 CAPLUS

CN Oxirane, 2,2'-[1,3-naphthalenediylbis(oxyethylene)]bis- (9CI) (CA INDEX NAME)



RN 34899-13-3 CAPLUS

CN Oxirane, 2,2'-[1,4-naphthalenediylbis(oxyethylene)]bis- (9CI) (CA INDEX NAME)



L5 ANSWER 739 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1970:121344 CAPLUS

DN 72:121344

OREF 72:21807a,21810a

TI Water-soluble epoxy compounds

IN Yoshida, Toshio; Nishi, Eijiro; Takenaka, Toshio

PA Taoka Dyestuff Manufg. Co., Ltd.

SO Jpn. Tokkyo Koho, 3 pp.

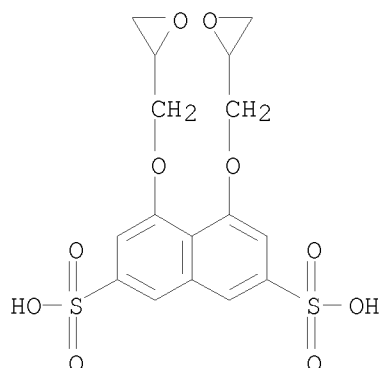
CODEN: JAXXAD

DT Patent

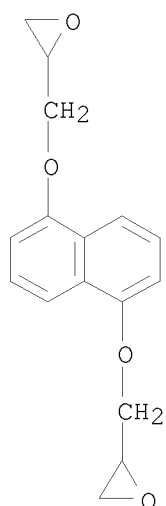
LA Japanese

FAN.CNT 1

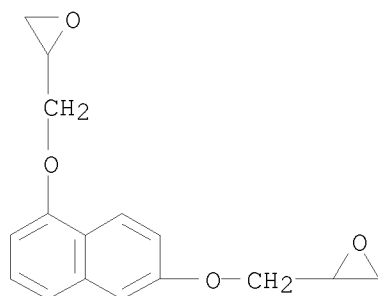
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 45004742	B4	19700217	JP	19650901
GI	For diagram(s), see printed CA Issue.				
AB	The title compds. (I) were prepared Thus, 110 g 97% H2SO4 was gradually added to 98 g molten PhOH at 40° with stirring and the mixture heated to 100° in 1 hr, stirred 1 hr at the same temperature, 200 g ice added, the mixt neutralized with 20% NaOH, 400 g epichlorohydrin added at 40-50°, the solution heated to 70° in 1 hr, 220 g 20% NaOH added, and the solution stirred 2 hr at 90-100° to give 400 g Na glycidyloxybenzene-sulfonate. Similarly were prepared the glycidyl ethers of Na 1-hydroxy-2-chloro-4-benzenesulfonate, Na 4-tert-butyl-2-hydroxy-2-benzenesulfonate, and 2-hydroxy-3,6-naphthalenedisulfonate, and the bis(glycidyl ethers) of resorcinol monosulfonate and 1,8-dihydroxy-3,6-naphthalenedisulfonate.				
IT	26564-67-0P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)				
RN	26564-67-0 CAPLUS				
CN	2,7-Naphthalenedisulfonic acid, 4,5-bis(2-oxiranylmethoxy)- (CA INDEX NAME)				



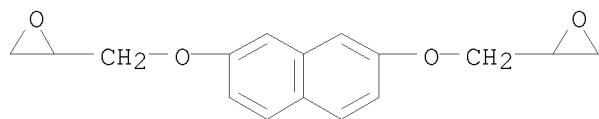
L5 ANSWER 740 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1970:56177 CAPLUS  
 DN 72:56177  
 OREF 72:10305a,10308a  
 TI Thermal analysis of nitro-substituted epoxide polymers  
 AU Fleming, Gerald J.  
 CS U. S. Nav. Ordnance Lab., Silver Spring, MD, USA  
 SO Journal of Applied Polymer Science (1969), 13(12), 2579-92  
 CODEN: JAPNAB; ISSN: 0021-8995  
 DT Journal  
 LA English  
 AB The thermal properties of a number of nitro-substituted and analogous non-nitrosubstituted epoxide polymers were studied. Dramatic increases in char yield and decreases in maximum rate of weight loss were observed for the nitrosubstituted systems compared to their non-nitrated analogs. These effects were enhanced when highly functional and highly aromatic epoxide resins were used. The sample size and heating rate employed had pronounced effects upon the amount of char formed during thermal degradation. Anal. of char residues indicates ring formation for the nitro-substituted systems during pyrolysis.  
 IT 27610-47-5P 27610-48-6P 27610-49-7P  
 RL: PREP (Preparation)  
 (cured by nitro compds., char yield and thermal properties of)  
 RN 27610-47-5 CAPLUS  
 CN Oxirane, 2,2'-[1,5-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 27610-48-6 CAPLUS  
 CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)



RN 27610-49-7 CAPLUS  
 CN Oxirane, 2,2'-[2,7-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)



L5 ANSWER 741 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1969:4955 CAPLUS  
 DN 70:4955  
 OREF 70:961a,964a  
 TI Polycyclic epoxides and resins produced therefrom  
 IN Starcher, Paul S.; Tinsley, Samuel W.; Ash, Bertrand D.  
 PA Union Carbide Corp.  
 SO U.S., 12 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

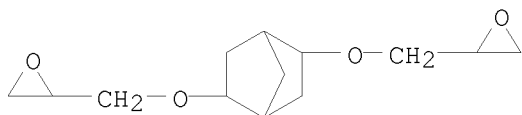
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3404102	A	19681001	US 1964-358607	19640409
PRAI	US 1964-358607		19640409		

AB Epoxide monomers and resins, with the monomer containing 2-4 epoxy groups in saturated aliphatic substituents bonded through oxy, carbonyloxy, oxyalkylene, or carbonyloxyalkylene groups to a bicyclo[2.2.1]heptyl ring or a larger fused homocarbocyclic ring, useful as clear coatings and laminants, are provided. Thus, to a mixture of 1160 g. allyl alc. and 20.8 g. BF<sub>3</sub>, heated at 75° was added 920 g. bicyclo[2.2.1]hepta-2,5-diene, the mixture refluxed 11 hrs., the catalyst neutralized with 70 g. anhydrous NaOAc, and the mixture distilled to give bicyclo[2.2.1]hepta-5-en-2-yl allyl ether, the corresponding morticyclyl allyl ether, and 284 g. of a mixture of 2,5- and 2,6-bis(allyloxy)bicyclo[2.2.1]heptane (I), b. at 77°, nD<sub>30</sub> 1.4719-1.4750. To 416 g. I was added dropwise 1622 g. 22.5% HClO<sub>4</sub> in EtOAc at 55° and after 10 hrs. the mixture codistd. with EtPh to remove HOAc and EtOAc and fractionated to give the corresponding monoepoxide and 319 g. mixture of 2,5- and 2,6-bis(2,3-epoxypropoxy)bicyclo[2.2.1]heptane (II), b0.05 140°, ηD<sub>30</sub> 1.4858. II (16.9 g.) and 3.1 g. diethylenetriamine (III) were kept 18 hrs. at room temperature to form a hard resinous product which was placed in a 50° oven fitted with a sun lamp., with the sample 5 in. from the sun lamp. After 2 days, the sample had changed from Gardner color 1 to 1+, while a conventional epoxy resin system prepared from bisphenol A and III changed from 3 to 5. Similarly, mixts. consisting of 2,5- and 2,6-bis(3,4-epoxybutyryloxy)bicyclo[2.2.1]heptane, b0.2 165-75°, nD<sub>30</sub> 1.4830-1.4842; 2,5-and 2,6-bis(3,4-epoxycyclohexylmethoxy)bicyclo[2.2.1]heptane; 2,5- and 2,6-bis(3,4-epoxycyclohexylcarbonyloxy)bicyclo[2.2.1]-heptane; 3,8- and 3,9-bis(2,3-epoxypropoxy)tricyclo[5.2.1.0<sup>2,6</sup>]decane; 3,9- and 3,10-bis(2,3-epoxypropoxy)pentacyclo[10.2.1.1<sup>8,11</sup>.-05,13.0<sup>7,12</sup>]pentadecane; and 4,11- and 4,12-bis(2,3-epoxypropoxymethyl)pentacyclo[6.6.1.0<sup>2,7</sup>.0<sup>9,14</sup>]pentadecane were prepared

IT 19249-26-4 22590-53-0  
RL: USES (Uses)  
(epoxy resins from)

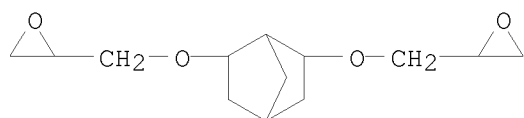
RN 19249-26-4 CAPLUS

CN Oxirane, 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxyethylene)]bis- (9CI)  
(CA INDEX NAME)



RN 22590-53-0 CAPLUS

CN Norbornane, 2,6-bis(2,3-epoxypropoxy)- (8CI) (CA INDEX NAME)



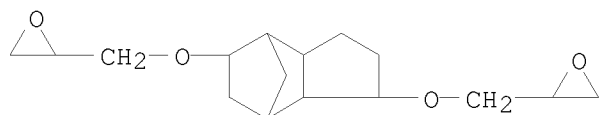
IT 22590-59-6P 22590-60-9P

RL: PREP (Preparation)

(preparation of)

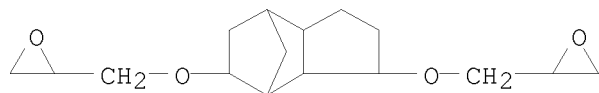
RN 22590-59-6 CAPLUS

CN 4,7-Methanoindan, 1,5-bis(2,3-epoxypropoxy)hexahydro- (8CI) (CA INDEX NAME)



RN 22590-60-9 CAPLUS

CN 4,7-Methanoindan, 1,6-bis(2,3-epoxypropoxy)hexahydro- (8CI) (CA INDEX NAME)



L5 ANSWER 742 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1968:60218 CAPLUS

DN 68:60218

OREF 68:11662h,11663a

TI Curable compositions from epoxy compounds and hardeners

IN Dissen, Israel J.

PA Velsicol Chemical Corp.

SO U.S., 4 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3366602	A	19680130	US 1965-453506	19650505
PRAI	US 1965-453506		19650505		

GI For diagram(s), see printed CA Issue.

AB 5,8-Bis(2,3-epoxypropoxy)-1,2,3,4,9,9-hexachloro-1,4-dihydro-1,4-methanonaphthalene (I) was prepared by treating a hexachlorocyclopentadiene (II)-benzoquinone (III) adduct with epichlorohydrin (IV). I was also prepared by converting the adduct to 5,8-dihydroxy-1,2,3,4,9,9-hexachloro-1,4-dihydro-1,4-methanonaphthalene (V) and then treating V with IV. I was cured with a polyamine or a mixture of a polycarboxylic anhydride and a polyol to produce a self-extinguishing molding resin. Thus, 214 g. II and 82.6 g. III were heated at

130-60° for 15 min. and the hot reaction mixture was poured into a chilled beaker and quenched with C<sub>6</sub>H<sub>14</sub>. The precipitate was recrystd. from a C<sub>6</sub>H<sub>6</sub>-C<sub>6</sub>H<sub>14</sub> mixture to yield the adduct as a yellow solid, m. 184°. A mixture of 38.1 g. II-III adduct, 92.5 g. IV, and 0.5 ml. H<sub>2</sub>O was treated with 9.0 g. NaOH pellets while keeping the temperature at 60-70°. The excess IV was stripped off under vacuum to a pot temperature of 70°. The residue was extracted with boiling C<sub>6</sub>H<sub>14</sub> to yield I, m. 95-7°. Alternatively, 2.0 g. adduct was dissolved in MeOH containing 5 drops pyridine and refluxed for 0.5 hr. A few drops of H<sub>2</sub>SO<sub>4</sub> was added and the solution was evaporated to half its volume H<sub>2</sub>O was added to precipitate V, m. 184-6°

(MeOH).

A mixture of 38.1 g. V, 1.0 mole IV, and 0.5 ml. H<sub>2</sub>O was treated with 8.2 g. NaOH while the temperature was kept at 60-5°. After 20 min. at 80°, excess IV was stripped off under vacuum at ≤80° and the residue was extracted with hot C<sub>6</sub>H<sub>14</sub> to yield I. A mixture of I 24.4, chlorendic anhydride 14.7, and trimethylolpropane 0.9 g. was heated at 120° until a clear solution was obtained. The mixture was then poured into a preheated mold and heated for 1 hr. at 120°, 2 hrs. at 150°, and 16 hrs. at 180°. The molded resin was self-extinguishing. Similar compns. were prepared by using phthalic anhydride and ethylene glycol, pyromellitic anhydride and hexane-1,4-diol, dodecenylsuccinic anhydride and 1,3-propylene glycol, m-phenylenediamine, ethylenediamine, 1,6-diaminohexane, diethylenetriamine, or m-xylylenediamine as the curing agent.

IT 30108-80-6 30111-36-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(crosslinking of, with m-phenylenediamine)

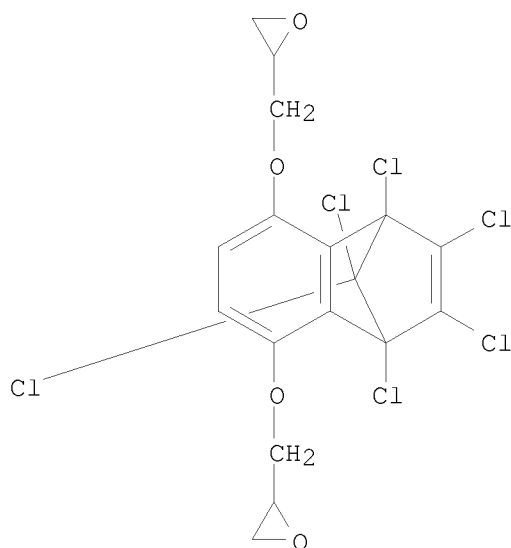
RN 30108-80-6 CAPLUS

CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-, polymers (8CI) (CA INDEX NAME)

CM 1

CRN 6019-59-6

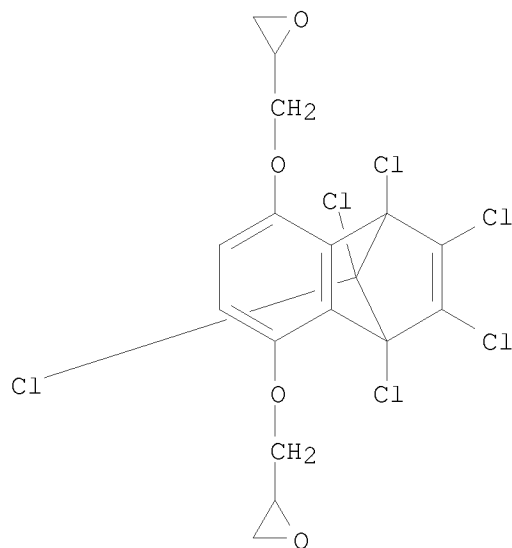
CMF C17 H12 Cl6 O4



RN 30111-36-5 CAPLUS  
 CN Phenol, 4,4'-isopropylidenedi-, polymer with 1-chloro-2,3-epoxypropane and 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-1,4-methanonaphthalene (8CI) (CA INDEX NAME)

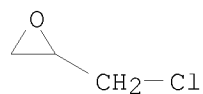
CM 1

CRN 6019-59-6  
 CMF C17 H12 Cl6 O4



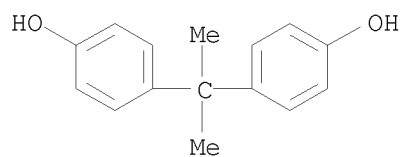
CM 2

CRN 106-89-8  
 CMF C3 H5 Cl O

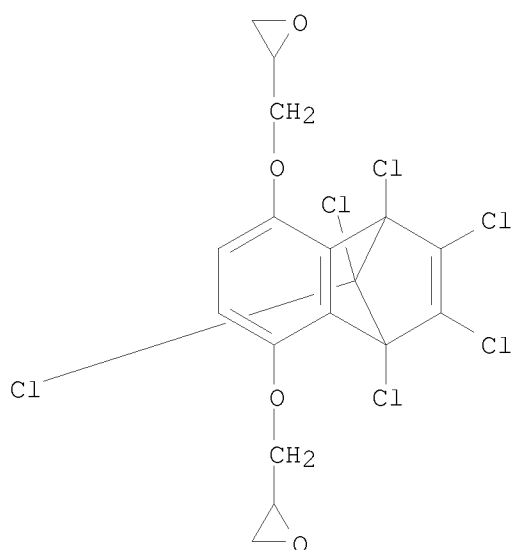


CM 3

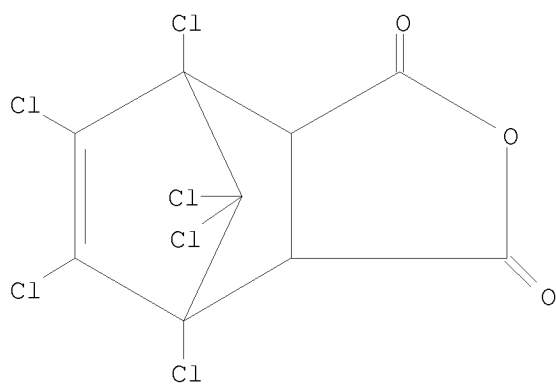
CRN 80-05-7  
 CMF C15 H16 O2



IT 30111-35-4P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manufacture of)  
 RN 30111-35-4 CAPLUS  
 CN 5-Norbornene-2,3-dicarboxylic anhydride, 1,4,5,6,7,7-hexachloro-, polymer  
 with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and  
 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-1,4-  
 methanonaphthalene (8CI) (CA INDEX NAME)  
 CM 1  
 CRN 6019-59-6  
 CMF C17 H12 Cl6 O4



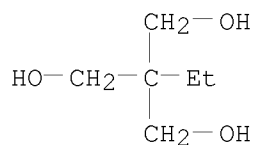
CM 2  
 CRN 115-27-5  
 CMF C9 H2 Cl6 O3



CM 3

CRN 77-99-6

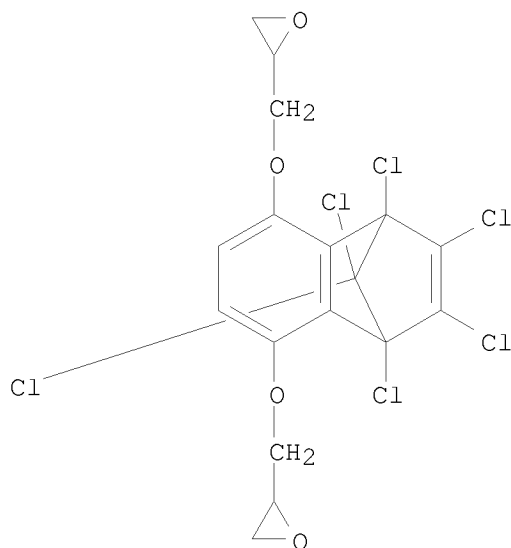
CMF C6 H14 O3



IT 6019-59-6P

RL: PREP (Preparation)  
(preparation of)

RN 6019-59-6 CAPLUS

CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-  
1,4-dihydro- (7CI, 8CI) (CA INDEX NAME)

L5 ANSWER 743 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1967:454780 CAPLUS

DN 67:54780

OREF 67:10335a,10338a

TI Epoxide compositions cured with 1,4-bis(amino-methyl)cyclohexane

IN Lee, Henry Lawrence

PA Epoxylite Corp.

SO U.S., 6 pp.

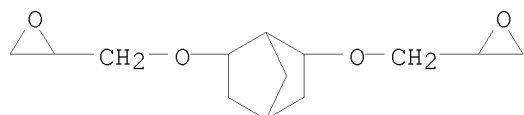
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3327016		19670620	US 1964-381925	19640121
AB	<p>Polyepoxide compns. are cured by 1,4-bis(aminomethyl)cyclohexane to form products which do not discolor when exposed to uv. The products are useful for aircraft and missile glazing, adhesives, and casting resins for dental products such as jacket crowns and dentures. Thus, 10 parts com. bisphenol A diglycidyl ether (180 epoxy equivalent weight) was mixed with 2 parts 1,4-bis(aminomethyl)cyclohexane at room temperature After 30 min. at room temperature, the mixture had cured to form a clear solid product. The product was postcured an addnl. 30 min. at 250°F. There was no color change. The postcured resin was exposed to uv, using the ASTM 620-57T test. After 24 hrs. exposure, there was no color shift compared with other amine curing agents, resins containing which became markedly discolored when exposed to the same test. The amines were ethylenediamine, diethylenetriamine, triethylenetetramine, diethylaminopropylamine, 1,4-diaminocyclohexane, hydroxypropylethylenediamine, menthanediamine, and m-xylylenediamine. Polyepoxides similarly tested were 1,4-endomethylene-2,6-cyclohexanediol, 2,2-bis(4-[2-chloromethyl-2-(2,3-epoxypropoxy)ethoxy]cyclohexyl)propane, and 2,2-bis[4-(2,3-epoxypropoxy)cyclohexyl]propane.</p>				
IT	17629-66-2				
	RL: RCT (Reactant); RACT (Reactant or reagent) (crosslinking by, of epoxy resins)				
RN	17629-66-2	CAPLUS			
CN	Norborene, 2,6-bis(2,3-epoxypropoxy)-, endo- (8CI) (CA INDEX NAME)				

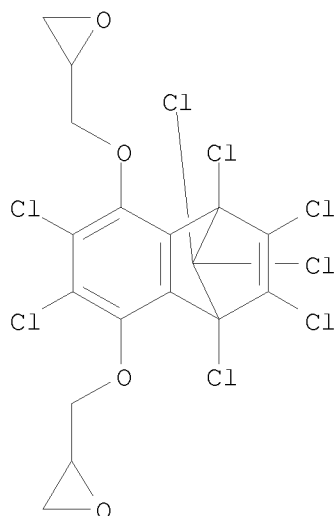


L5 ANSWER 744 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1966:75707 CAPLUS  
 DN 64:75707  
 OREF 64:14167g-h,14168a-b  
 TI Reaction of epichlorohydrin with hexachlorocyclopentadiene-benzoquinone adduct  
 IN Dissen, Israel J.  
 PA Velsicol Chemical Corp.  
 SO 4 pp.  
 DT Patent  
 LA Unavailable  
 FAN.CNT 1

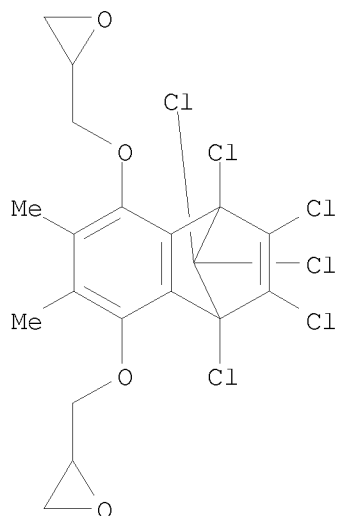
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3235569		19660215	US 1961-134816	19610830
PRAI	US		19610830		
GI	For diagram(s), see printed CA Issue.				
AB	A mixture of 214 g. hexachlorocyclopentadiene and 82.6 g. benzoquinone was heated 15 min. at 130-60°, the hot mixture poured into a chilled				

beaker, and quenched with hexane to give the title adduct (I), m. 184° (C<sub>6</sub>H<sub>6</sub>-hexane). A mixture of 38.1 g. I, 92.5 g. epichlorohydrin (II), and 0.5 ml. H<sub>2</sub>O was heated with stirring while NaOH was added. When the temperature reached 65°, the reaction became exothermic. The temperature was kept at 60-70° until 9 g. NaOH was added, the excess I removed in vacuo to pot temperature 70°, and the residue extracted with hot hexane to give 5,8-bis(epoxypropoxy)-1,2,3,4,9,9-hexachloro-1,4-dihydro-1,4-methanonaphthalene (III), m. 95-7°. A solution of 2 g. I in MeOH containing 5 drops C<sub>5</sub>H<sub>5</sub>N refluxed 0.5 hr. (decolorized in .apprx.20 min.), treated with a few drops H<sub>2</sub>SO<sub>4</sub>, evaporated to 1/2 volume, then treated with H<sub>2</sub>O gave 5,8-dihydroxy-1,2,3,4,9,9-hexachloro-1,4-dihydro-1,4-methanonaphthalene (IV), m. 184-6°. A stirred mixture of 38.1 g. IV, 1 mole II, and 0.5 ml. H<sub>2</sub>O treated with 8.2 g. NaOH (in 6 portions) during 1.5 hrs. at 60-5°, the mixture heated 20 min. at 80°, excess II removed in vacuo <80°, and the residue extracted with hot hexane gave III, m. 95-7°. The compds. can be cured with carboxylic acids or anhydrides, polyols, or polyfunctional amines to give resins. Examples illustrating the manner in which the compds. were polymerized to form hard, infusible resins, which were self-extinguishing when withdrawn from a free flame, are given.

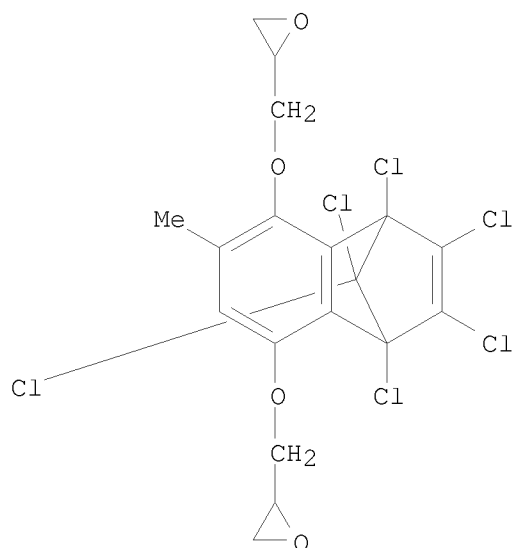
IT 5210-85-5P, 1,4-Methanonaphthalene,  
1,2,3,4,6,7,9,9-octachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-  
5493-44-7P, 1,4-Methanonaphthalene,  
1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-6,7-dimethyl-  
5569-65-3P, 1,4-Methanonaphthalene,  
1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-6-methyl-  
5569-66-4P, 1,4-Methanonaphthalene,  
1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-6-phenyl-  
6019-59-6P, 1,4-Methanonaphthalene,  
1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-  
RL: PREP (Preparation)  
(preparation of)  
RN 5210-85-5 CAPLUS  
CN 1,4-Methanonaphthalene, 1,2,3,4,6,7,9,9-octachloro-5,8-bis(2,3-  
epoxypropoxy)-1,4-dihydro- (7CI, 8CI) (CA INDEX NAME)



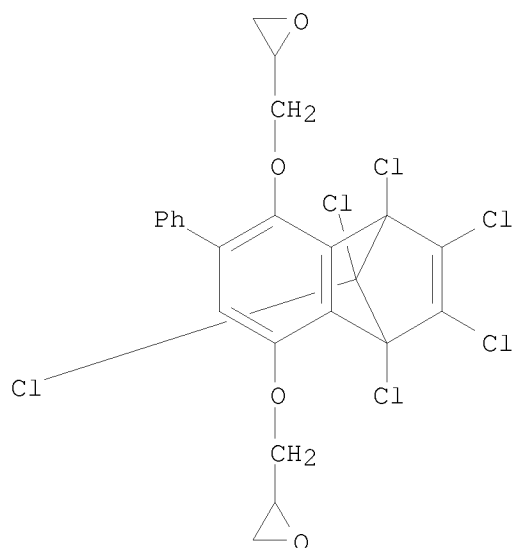
RN 5493-44-7 CAPLUS  
 CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-  
 1,4-dihydro-6,7-dimethyl- (7CI, 8CI) (CA INDEX NAME)



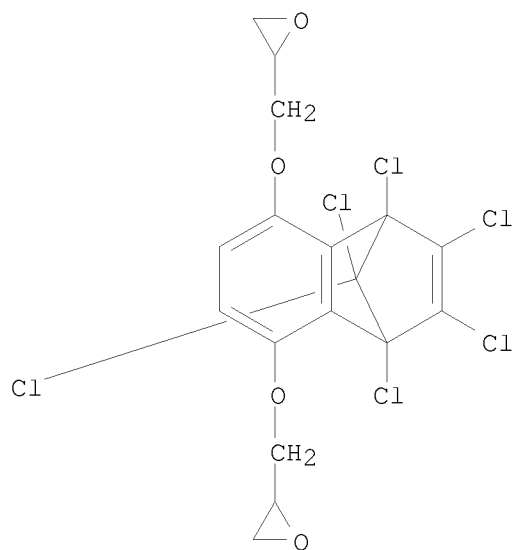
RN 5569-65-3 CAPLUS  
 CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-  
 1,4-dihydro-6-methyl- (7CI, 8CI) (CA INDEX NAME)



RN 5569-66-4 CAPLUS  
 CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-  
 1,4-dihydro-6-phenyl- (7CI, 8CI) (CA INDEX NAME)



RN 6019-59-6 CAPLUS  
 CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-  
 1,4-dihydro- (7CI, 8CI) (CA INDEX NAME)



L5 ANSWER 745 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1966:68554 CAPLUS  
 DN 64:68554  
 OREF 64:12871h,12872a  
 TI Dyeable, elastic, linear polyesters for films, fibers, and threads  
 PA Farbwerke Hoechst A.-G.  
 SO 14 pp.  
 DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	BE 652507		19650301	BE 1965-2507	19640831
	FR 1409986			FR	

PRAI DE 19630829

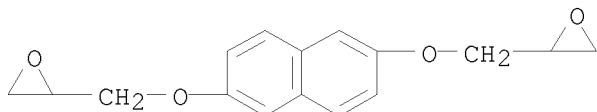
AB The title products, which are stretchable and have improved dyeability and elasticity, such as films, threads, or fibers, are obtained by polycondensation of hydroxyalkyl diesters of aromatic dicarboxylic acids in the presence of 0.1-1% diglycidyl compds. (I) free of basic N and having a low vapor pressure at the polycondensation temperature For example, 500 g. di-Me terephthalate was trans-esterified under N with 400 g. ethylene glycol in the presence of 0.1 g. Zn(OAc)<sub>3</sub> and 0.1 g. Sb<sub>2</sub>O<sub>3</sub>. After removal of excess glycol by vacuum distillation, 1.0 g. of the diglycidyl ether of 4,4'-dihydroxybiphenyl was added to the molten mass with stirring. In 120 min., an almost colorless mass (relative viscosity 1.840, m. 258.5°) was obtained, which was pressed into cold water under low-pressure N. This polyester was spun at 294° into filaments, which were stretched in a 1:4.6 ratio at 80° to give filaments 4.2 g./denier, elongation 32.6%, elasticity 91% at 40 and 85% at 42 kg./mm.<sup>2</sup> The modified filaments shrank 14% in air heated to 200° and 8% in boiling H<sub>2</sub>O, in the latter case with considerable curling.

IT 7327-24-4, Naphthalene, 2,6-bis(2,3-epoxypropoxy)-

(poly(ethylene terephthalate) modified by)

RN 7327-24-4 CAPLUS

CN Oxirane, 2,2'-[2,6-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)



L5 ANSWER 746 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1962:475868 CAPLUS

DN 57:75868

OREF 57:15073g-i,15074a-c

TI Glycidyl ethers

PA CIBA Ltd.

SO 23 pp.

DT Patent

LA Unavailable

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	BE 610419		19620516	BE	
	CH 393296			CH	
	GB 982151			GB	

PRAI CH 19601117

AB To a mixture of 1000 parts C<sub>6</sub>H<sub>6</sub> and 300 parts 8 (or 9)-hydroxy-8,9-dihydrodicyclopentadiene (I) (prepared from cyclopentadiene (II) and H<sub>2</sub>O) is added 20 parts of anhydrous AcONa with stirring. Over a period of 1 hr. 420 parts of 42% peracetic acid is added. The temperature of

the mixture is kept at 30° by cooling. After 2 more hrs. at 30° the C6H6 solution is washed with H2O and 2N Na2CO3 until acid free. The solution is dried over anhydrous Na2SO4, filtered, and evaporated

Vacuum

distillation of the residue yields 3,4-epoxy-8(or 9)-hydroxytetrahydrodicyclopentadiene (III), b0.01 120°. To a mixture of 83 parts III and 500 parts H2O I part by volume of 48% BF3 in Et2O is added and the mixture stirred 8.5 hrs. at 75. The solution is extracted with 200 parts Et2O. The aqueous

phase is

slowly percolated through a 20 g. Dowex 1-X8 ion-exchange column in the base form. The neutral solution is evaporated under vacuum. The residue is vacuum distilled to yield 58 parts 3,4,8(or 9)trihydroxytetrahydrodicyclopentadiene (IV), b0.2 200° (approx.). To 100 parts by volume anhydrous dioxane containing 18.4 parts IV is added 0.4 parts by volume 48% BF3 in Et2O. Epi- chlorohydrin (V) (27.8 parts) is added dropwise with stirring at 70-80°. The solution is cooled and at room temperature 12 parts ground NaOH are added in small portions. After 1/2; hr. the solution is filtered and evaporated. The residue is dissolved in 100 parts by volume C6M6, washed with 20 parts by volume M NaH2PO4, dried over anhydrous Na2SO4, filtered, and evaporated. The clear liquid residue contains 4.55 equivs. epoxide per kg. and is essentially the triglycidyl ether of IV. A diglycidyl ether (VI) derived from II is prepared thus. Tech. diepoxide of II (328 parts) in 400 parts by volume MeOH is shaken in the presence of 20 g. Raney Ni first at 100° and then at 150° under 80 to 120 atmospheric H pressure until no addnl. H is absorbed. The catalyst is removed by filtration and the solvent by evaporation. Vacuum

distillation

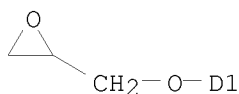
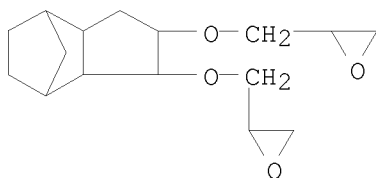
of the residue yields 240 parts 3(or 4), 8(or 9)-dihydroxytetrahydrodicyclopentadiene, b0.01-0.12 152-6°. The latter is treated with V as described to yield VI. To I (150 parts) in 150 parts of Me2CO is added 84 parts NaHCO3 in 850 parts H2O. The mixture is cooled to 10-15° and 64 parts Cl gas are bubbled into the mixture with stirring. The reaction mixture seps. into 2 phases. The lower phase contains the reaction product and small amts. Me2CO and H2O, which are removed by vacuum distillation. The product is 4(or 3)-chloro-3(or 4), 8(or 9)-dihydroxytetrahydrodicyclopentadiene (VII). The diglycidyl ether is prepared from VII and V. Polymerization of these glycidyl ethers yields useful epoxy resins.

IT 98520-41-3P, 4,7-Methanoindan, 1,2,5(or 1,2,6)-tris(2,3-epoxypropoxy)hexahydro-  
RL: PREP (Preparation)

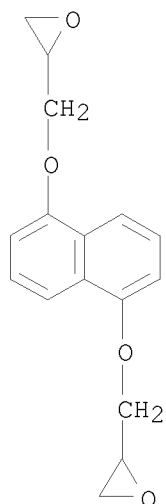
(preparation of)

RN 98520-41-3 CAPLUS

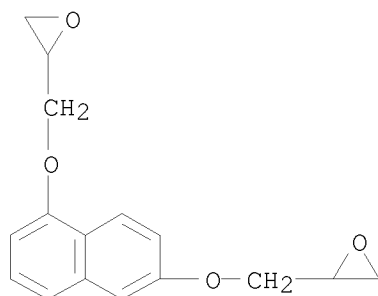
CN Oxirane, 2,2',2''-[[octahydro-4,7-methano-1H-indene-1,2,5(or 1,2,6)-triyl]tris(oxymethylene)]tris- (9CI) (CA INDEX NAME)



L5 ANSWER 747 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1961:11119 CAPLUS  
 DN 55:11119  
 OREF 55:2166g-i,2167a  
 TI Correlation between structure and thermal stability of epoxy resins  
 AU Ehlers, Gerhard F. L.  
 CS Wright Patterson Air Force Base, OH  
 SO Polymer (1960), 1, 304-314  
 CODEN: POLMAG; ISSN: 0032-3861  
 DT Journal  
 LA Unavailable  
 AB Thermal stability of cured epoxy resins was investigated in terms of weight loss and Vicat heat distortion temperature Resins used were:  
 1,1,3,3-tetrakis(p-glycidyloxyphenyl) ethane,  
 3,4-epoxy-6-methylcyclohexylmethyl  
 3,4-epoxy-6-methylcyclohexanecarboxylate, and the diglycidyl ethers of the following 6 phenols: Bisphenol A, 1,5- and 1,6-naphthalenediol, 3,3'- and 4,4'-dihydroxybiphenyl, and 4,4'-dihydroxydiphenyl sulfone. The Bisphenol A resin had an epoxy equivalent of 470. Amines, phenols, anhydrides, and BF<sub>3</sub>-EtNH<sub>2</sub> were employed as curing agents. In one series  $\alpha$ -pinene oxide, dipentene oxide, and allyl glycidyl ether were used as reactive diluents. The amines, phenols, and anhydrides (in order of descending Vicat temperature measured) were: 4,4'-diaminodiphenyl sulfone, benzidine, 2,4,6-triaminotoluene, N,N-diallylmelamine, 3,3'-diaminodiphenyl sulfone, m- and p-phenylenediamine, diethylenetriamine, ethylenediamine; phloroglucinol, 1,1,2,2-tetrakis(p-hydroxyphenyl) ethane, 4,4'-dihydroxydiphenyl sulfone, 1,6-, 1,5-, and 2,7-naphthalenediol, resorcinol, hydroquinone; pyromellitic dianhydride, maleic, citraconic, hexahydrophthalic, phthalic, succinic, and chlorendic anhydrides. Anhydride-cured resins generally gave the highest Vicat temperature  
 IT 27610-47-5, Naphthalene, 1,5-bis(2,3-epoxypropoxy)-  
 27610-48-6, Naphthalene, 1,6-bis(2,3-epoxypropoxy)-  
 (epoxy resins containing, thermal stability of)  
 RN 27610-47-5 CAPLUS  
 CN Oxirane, 2,2'-[1,5-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 27610-48-6 CAPLUS  
 CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)

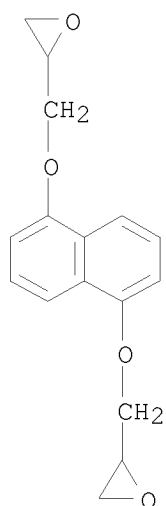


L5 ANSWER 748 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1957:45314 CAPLUS  
 DN 51:45314  
 OREF 51:8436c-e  
 TI Chemically modified cellulose  
 IN Doughty, Mark; Brown, Brindley J.  
 PA Fothergill and Harvey, Ltd.  
 DT Patent  
 LA Unavailable  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 757386		19560919	GB 1953-7111	19530314
AB	Cross linkages containing aromatic rings are used to modify cellulose. Cellulose is treated with a bis(glycidyl ether) of a polyhydroxyphenol, i.e. hydroquinone, resorcinol, phloroglucinol, dihydroxynaphthalene, in the presence of the hydroxide of an alkali metal and heated. For example, the mixed diastereoisomers of resorcinol bis(glycidyl ether) were prepared				

by the reaction of resorcinal, epichlorohydrin, and NaOH. The bis-ether was purified by distillation and the middle fraction b2.5 182-9° was used for treatment of cellulose. Regenerated cellulose fibers (after treatment with 18% NaOH) were immersed in a 30% xylene solution of the resorcinol bis(glycidyl ether) and heated at 120° for 13 min. After washing, the resulting cellulose fibers were found to be insol. in cuprammonium hydroxide.

IT 27610-47-5P, Naphthalene, 1,5-bis(2,3-epoxypropoxy)-  
 RL: PREP (Preparation)  
 (manufacture and cellulose modification therewith)  
 RN 27610-47-5 CAPLUS  
 CN Oxirane, 2,2'-[1,5-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



L5 ANSWER 749 OF 749 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1954:13253 CAPLUS  
 DN 48:13253  
 OREF 48:2406h-i,2407a-b  
 TI Epoxy resins from bis-, tris-, and tetrakis-glycidyl ethers  
 AU Dearborn, Elizabeth C.; Fuoss, Raymond M.; MacKenzie, Alfred K.; Shepherd, Ridgley G., Jr.  
 CS United States Testing Co., Boston, MA  
 SO Journal of Industrial and Engineering Chemistry (Washington, D. C.) (1953), 45, 2715-21  
 CODEN: JIECAD; ISSN: 0095-9014  
 DT Journal  
 LA Unavailable  
 AB The reaction between polyglycidyl ethers and carboxylic acid anhydrides was studied by using the thermal yield point as the significant experimentally observed variable. The yield point increases with increasing anhydride content of the molding compound to a maximum which corresponds to a ratio of one mole of anhydride to one mole of epoxy oxygen. Maximum impact strength and min. heat loss likewise appear at this stoichiometrically critical composition Amines were found to accelerate the

reaction markedly. The following compns. are described, together with the synthesis of new intermediates: phthalic anhydride with the glycidyl ethers of 1,3,5-trihydroxybenzene, 2,2,5,5-tetrakis(4-hydroxyphenyl)hexane, 2,2,4,4-tetrakis(4-hydroxyphenyl)pentane, 2,2,3,3-tetrakis(4-hydroxyphenyl)butane, 2,2-bis(4-hydroxyphenyl)propane, tris(4-hydroxyphenyl)methane, 1,5-dihydroxynaphthalene, 1,3-dihydroxybenzene, and 1,4-dihydroxybenzene; Epon 834 (Shell Chemical Corp.) with phthalic, maleic, 4-cyclohexene-1,2-dicarboxylic, adipic poly-, dichlorophthalic, and 1,5-dimethyl-2,3,4,6,7,8-hexahydronaphthalene-3,4,7,8-tetracarboxylic anhydrides. Increasing the functionality of the glycidyl ether and (or) that of the anhydride increases the thermal yield point.

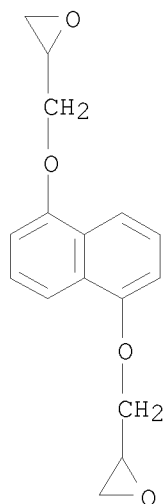
IT 27610-47-5P, Naphthalene, 1,5-bis(2,3-epoxypropoxy)-

RL: PREP (Preparation)

(preparation and reaction with anhydrides)

RN 27610-47-5 CAPLUS

CN Oxirane, 2,2'-[1,5-naphthalenediylbis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



=> s 15 and curable

56893 CURABLE

L6 86 L5 AND CURABLE

=> d 80-86 bib abs hitstr

L6 ANSWER 80 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1993:474679 CAPLUS

DN 119:74679

OREF 119:13441a,13444a

TI Radiation-curable 1,1'-methylenebisnaphthalene derivatives containing (meth)acrylate groups

IN Kinoshita, Masayuki; Ishikawa, Hidenori

PA Dainippon Ink and Chemicals, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

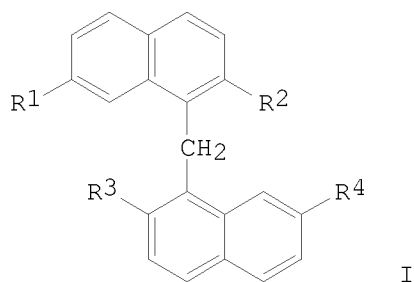
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04255710	A	19920910	JP 1991-17648	19910208
	JP 3019429	B2	20000313		
PRAI	JP 1991-17648		19910208		
GI					



AB The title compds., prepared by reacting I (R1-4 = H, glycidyloxy; all of R1-4 can not be H simultaneously) with oxirane-reactive unsatd. compds. and polybasic anhydrides, are useful for coatings, inks, etc. Thus, reacting I (R1-4 = glycidyloxy) with acrylic acid, then reacting the resulting product with tetrahydrophthalic anhydride gave a product, which gave a UV-cured coating with good heat, water, and alkali resistance.

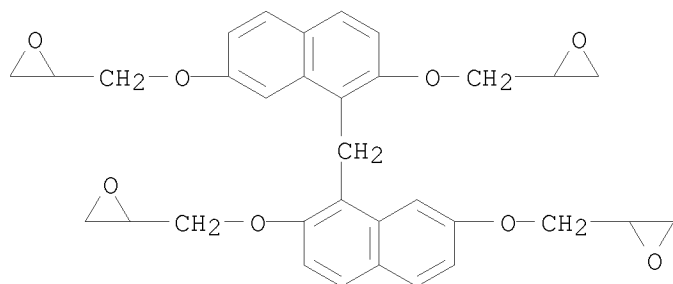
IT 146794-56-1DP, acrylates, reaction products with tetrahydrophthalic anhydride, polymers

RL: PREP (Preparation)

(preparation of photocured, heat-, water- and alkali-resistant)

RN 146794-56-1 CAPLUS

CN Oxirane, 2,2',2'',2'''-[methylenebis[1,2,7-naphthalenetriylbis(oxymethylene)]]tetrakis- (CA INDEX NAME)



L6 ANSWER 81 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1993:410121 CAPLUS

DN 119:10121  
 OREF 119:2029a,2032a  
 TI Soldering heat-resistant epoxy resin potting compositions for surface mounting of semiconductor devices  
 IN Honda, Shiro; Teshiba, Toshihiro; Tanaka, Masayuki  
 PA Toray Industries, Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 04325517	A	19921113	JP 1991-97619	19910426
	JP 2501143	B2	19960529		
PRAI	JP 1991-97619		19910426		
OS	MARPAT 119:10121				

AB The title compns. comprise (A) main resin part containing the bifunctional biphenyl- and/or naphthalene-based epoxy resins, (B) crosslinkers which are essentially phenol-aralkyl resins, and (C) inorg. fillers containing the 97-60:3-40 mixture of crushed fumed silica (a) with particle size (s)  $\leq 10 \mu\text{m}$  and spherical fused silica (b) with  $s \leq 4 \mu\text{m}$  (and must be smaller than that of a. A title composition was formulated from 4,4'-bis(2,3-epoxypropoxy)-3,3',5,5'-tetramethylbiphenyl 7.4, a hydroxyphenyl-terminated polyphenylenepoly-p-xylylene 8.3, a-type silica 76.0, b-type silica 4.0 parts, silane coupler and ordinary auxiliaries.

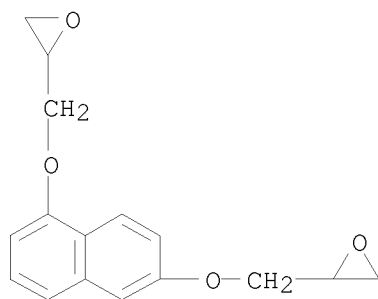
IT 27610-48-6

RL: USES (Uses)

(potting compns. curable with polyphenols, silica fillers in, for heat soldering heat resistance)

RN 27610-48-6 CAPLUS

CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)



L6 ANSWER 82 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1993:170251 CAPLUS  
 DN 118:170251  
 OREF 118:29214h,29215a  
 TI Epoxy resin and its intermediates, manufacture, and compositions  
 IN Ogura, Ichiro; Ebara, Toshiharu; Kitamura, Taku; Sakata, Hiroshi  
 PA Dainippon Ink and Chemicals, Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.

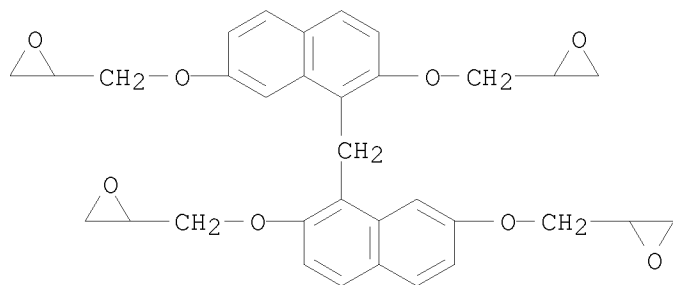
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04217675	A	19920807	JP 1991-32765	19910227
	JP 3137202	B2	20010219		
	US 5302672	A	19940412	US 1992-841470	19920226
PRAI	JP 1990-292470	A1	19901030		
	JP 1990-323239	A1	19901128		
	JP 1991-32765	A	19910227		
AB	1,1-Bis(2,7-diglycidyoxy-1-naphthyl)methane prepared by reacting epichlorohydrin and 1,1-bis(2,7-dihydroxy-1-naphthyl)methane obtained in 100% yield from 2,7-dihydroxynaphthalene (I) and HCHO is curable with curing agents showing excellent heat and water resistance and toughness, especially suitable for semiconductor potting; similar results are obtained when I is used together with $\beta$ -naphthol.				
IT	146794-56-1P				
	RL: PREP (Preparation)				
	(epoxy resin intermediates, manufacture of)				
RN	146794-56-1 CAPLUS				
CN	Oxirane, 2,2',2'',2'''-[methylenebis[1,2,7-naphthalenetriylbis(oxymethylene)]]tetrakis- (CA INDEX NAME)				



L6 ANSWER 83 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1992:153197 CAPLUS

DN 116:153197

OREF 116:25941a,25944a

TI Low-temperature-curable polymaleimide compositions

IN Shinohara, Norio; Otani, Kazuo; Hanyuda, Toshiaki

PA Showa Highpolymer Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

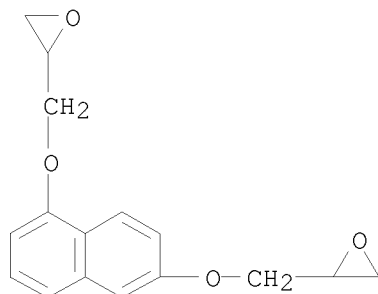
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03258819	A	19911119	JP 1990-54941	19900308
	JP 06078411	B	19941005		
PRAI	JP 1990-54941		19900308		

AB The title compns. giving cured products with excellent toughness contain compds. having  $\geq 1$  maleimide group in mol. and compds. having  $\geq 2$  vinylbenzyl ether groups linked to benzene or naphthalene nuclei [prepared by chain extending of polyvalent phenols or naphthols by (0.05-0.5):1 equiv epoxy resins (based on the phenols or naphthols)]. Thus, after 1.0 equiv 2-methylhydroquinone was treated with 0.25 equiv bisphenol A epoxy resin (epoxy equiv 189) at 150° for .apprx.1 h in the presence of Et3N, a solution of 0.75 equiv KOH and 0.75 equiv chloromethylstyrene in aqueous DMSO was added dropwise at 70-80° over 1 h and kept at 70-80° for addnl. 2 h to give a chain-extended methylhydroquinone benzyl ether (I) (viscosity 700 P/25°). A mixture of 100 parts I and 100 parts N,N'-diphenylmethanebis(maleimide) (II) showed gel time 3.5 min (120°). Then, the mixture was molded at 120° for 30 min and postcured at 250° for 5 h to give test specimens showing maximum deflection in bending test 4.0 mm at 23°, 5.4 mm at 270°, compared with 3.2 for specimens containing untreated methylhydroquinone divinylbenzyl ether instead of I.

IT 27610-48-6D, reaction product with dihydroxynaphthalene and chloromethylstyrene  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (crosslinking agents, for polymaleimides, low-temperature-curable, for good toughness)

RN 27610-48-6 CAPLUS

CN Oxirane, 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis- (CA INDEX NAME)



L6 ANSWER 84 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1989:515914 CAPLUS

DN 111:115914

OREF 111:19447a,19450a

TI Light- and electron beam-curable phenanthrene (meth)acrylates

IN Sugiura, Michio; Kato, Yuzo

PA Nippon Steel Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF

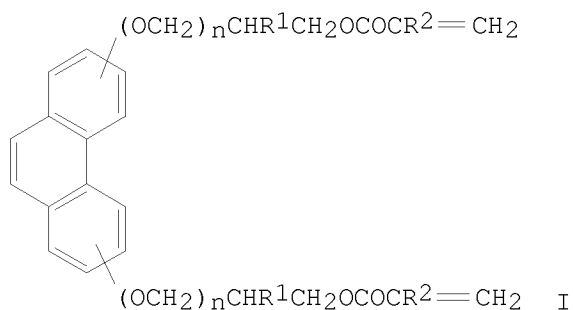
DT Patent

LA Japanese

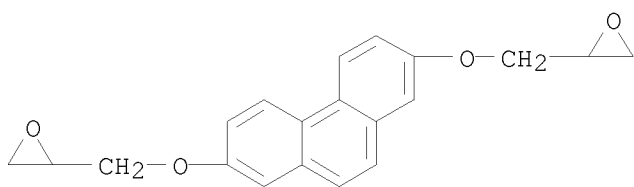
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 01075447	A	19890322	JP 1987-234140	19870918
PRAI	JP 1987-234140		19870918		

GI



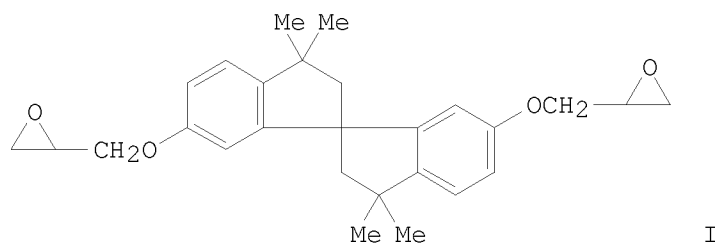
- AB The title (meth)acrylates I (R<sub>1</sub> = OH, OCOCR<sub>2</sub>:CH<sub>2</sub>; R<sub>2</sub> = H, Me; n ≥ 1) give cured products with good hardness, adhesion, and heat resistance and are useful for coatings, inks, adhesives, etc. Thus, 2,7-bis(1,2-epoxypropoxy)phenanthrene, prepared from phenanthrene in 4 steps, was refluxed with methacrylic acid in benzene in the presence of Et<sub>3</sub>N to give 80% 2,7-I (R<sub>1</sub> = OH, R<sub>2</sub> = Me, n = 1), which was treated with methacryloyl chloride in benzene to give 70% 2,7-I (R<sub>1</sub> = OCOCMe:CH<sub>2</sub>, R<sub>2</sub> = Me, n = 1) (II). II containing 30% poly(vinylpyrrolidone) and 3% Merck 1173-Irgacure 651 (1/4) mixture was applied on an Al plate and irradiated by UV to form a coating with crosscut adhesion 97/100, vs. 28/100 using Viscoat 540 instead of II.
- IT 119864-55-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with (meth)acrylic acid)
- RN 119864-55-0 CAPLUS
- CN Oxirane, 2,2'-[2,7-phenanthrenediylbis(oxyethylene)]bis- (9CI) (CA INDEX NAME)



- L6 ANSWER 85 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
- AN 1989:155003 CAPLUS
- DN 110:155003
- OREF 110:25655a,25658a
- TI 6,6'-Dihydroxy-3,3,3',3'-tetramethyl-1,1'-spirobiindan diglycidyl ether and its manufacture
- IN Tanabe, Yoshimitsu; Uragami, Tatsunobu; Yamaguchi, Keisaburo; Yamaguchi, Teruhiro
- PA Mitsui Toatsu Chemicals, Inc., Japan
- SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63150270	A	19880622	JP 1986-294991	19861212
	JP 07080862	B	19950830		
PRAI	JP 1986-294991		19861212		
GI					



AB Title compound (I) is prepared by treating 6,6'-dihydroxy-3,3,3',3'-tetramethyl-1,1'-spirobiindan (II) with epihalohydrin in the presence of a dehydrohalogenation agent. I cured with 17.2 phr Epicure Z and heated in a mold at 80° for 2 h and then at 150° for 2 h showed heat distortion temperature 160.5°, water absorption 0.51%, flexural strength 5.5 kgf/mm<sup>2</sup>, flexural modulus 316 kgf/mm<sup>2</sup>, and d. 1.154 g/cm<sup>3</sup>.

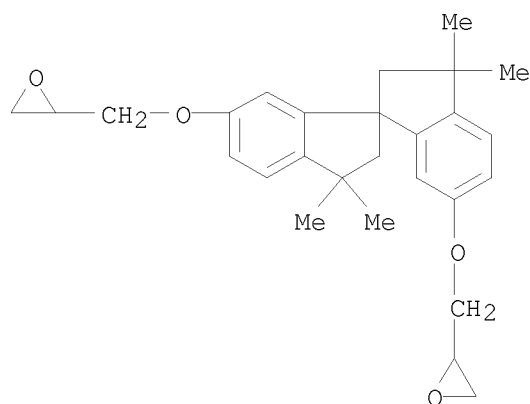
IT 120004-95-7P

RL: PREP (Preparation)

(preparation of, as curable resins)

RN 120004-95-7 CAPLUS

CN Oxirane, 2,2'-[(2,2',3,3'-tetrahydro-3,3,3',3'-tetramethyl-1,1'-spirobi[1H-indene]-6,6'-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



AN 1968:60218 CAPLUS  
 DN 68:60218  
 OREF 68:11662h,11663a  
 TI Curable compositions from epoxy compounds and hardeners  
 IN Dissen, Israel J.  
 PA Velsicol Chemical Corp.  
 SO U.S., 4 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 3366602	A	19680130	US 1965-453506	19650505
PRAI	US 1965-453506		19650505		

GI For diagram(s), see printed CA Issue.

AB 5,8-Bis(2,3-epoxypropoxy)-1,2,3,4,9,9-hexachloro-1,4-dihydro-1,4-methanonaphthalene (I) was prepared by treating a hexachlorocyclopentadiene (II)-benzoquinone (III) adduct with epichlorohydrin (IV). I was also prepared by converting the adduct to 5,8-dihydroxy-1,2,3,4,9,9-hexachloro-1,4-dihydro-1,4-methanonaphthalene (V) and then treating V with IV. I was cured with a polyamine or a mixture of a polycarboxylic anhydride and a polyol to produce a self-extinguishing molding resin. Thus, 214 g. II and 82.6 g. III were heated at 130-60° for 15 min. and the hot reaction mixture was poured into a chilled beaker and quenched with C<sub>6</sub>H<sub>14</sub>. The precipitate was recrystd. from a C<sub>6</sub>H<sub>6</sub>-C<sub>6</sub>H<sub>14</sub> mixture to yield the adduct as a yellow solid, m. 184°. A mixture of 38.1 g. II-III adduct, 92.5 g. IV, and 0.5 ml. H<sub>2</sub>O was treated with 9.0 g. NaOH pellets while keeping the temperature at 60-70°. The excess IV was stripped off under vacuum to a pot temperature of 70°. The residue was extracted with boiling C<sub>6</sub>H<sub>14</sub> to yield I, m. 95-7°. Alternatively, 2.0 g. adduct was dissolved in MeOH containing 5 drops pyridine and refluxed for 0.5 hr. A few drops of H<sub>2</sub>SO<sub>4</sub> was added and the solution was evaporated to half its volume H<sub>2</sub>O was added to precipitate V, m. 184-6°

(MeOH).

A mixture of 38.1 g. V, 1.0 mole IV, and 0.5 ml. H<sub>2</sub>O was treated with 8.2 g. NaOH while the temperature was kept at 60-5°. After 20 min. at 80°, excess IV was stripped off under vacuum at ≤80° and the residue was extracted with hot C<sub>6</sub>H<sub>14</sub> to yield I. A mixture of I 24.4, chlorendic anhydride 14.7, and trimethylolpropane 0.9 g. was heated at 120° until a clear solution was obtained. The mixture was then poured into a preheated mold and heated for 1 hr. at 120°, 2 hrs. at 150°, and 16 hrs. at 180°. The molded resin was self-extinguishing. Similar compns. were prepared by using phthalic anhydride and ethylene glycol, pyromellitic anhydride and hexane-1,4-diol, dodecenylsuccinic anhydride and 1,3-propylene glycol, m-phenylenediamine, ethylenediamine, 1,6-diaminohexane, diethylenetriamine, or m-xylylenediamine as the curing agent.

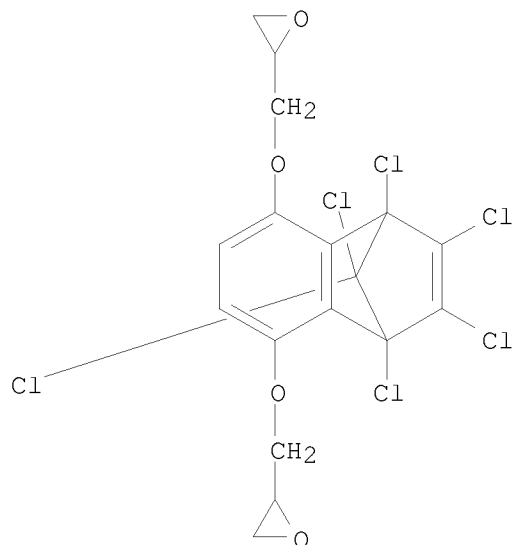
IT 30108-80-6 30111-36-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (crosslinking of, with m-phenylenediamine)

RN 30108-80-6 CAPLUS

CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-, polymers (8CI) (CA INDEX NAME)

CM 1

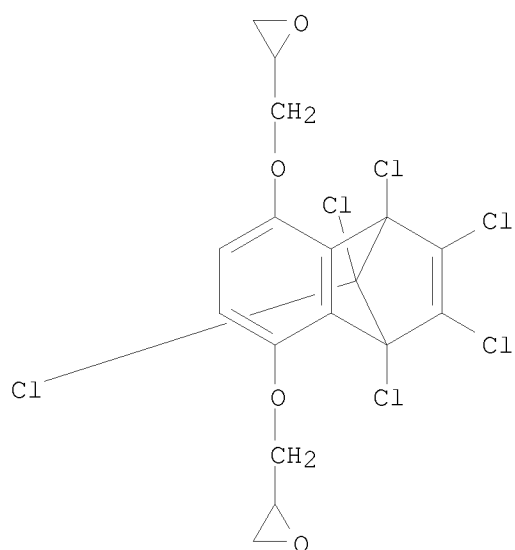
CRN 6019-59-6  
CMF C17 H12 Cl6 O4



RN 30111-36-5 CAPLUS  
CN Phenol, 4,4'-isopropylidenedi-, polymer with 1-chloro-2,3-epoxypropane and 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-1,4-methanonaphthalene (8Cl) (CA INDEX NAME)

CM 1

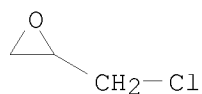
CRN 6019-59-6  
CMF C17 H12 Cl6 O4



CM 2

CRN 106-89-8

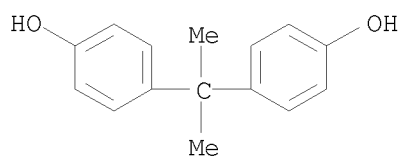
CMF C3 H5 Cl O



CM 3

CRN 80-05-7

CMF C15 H16 O2



IT 30111-35-4P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of)

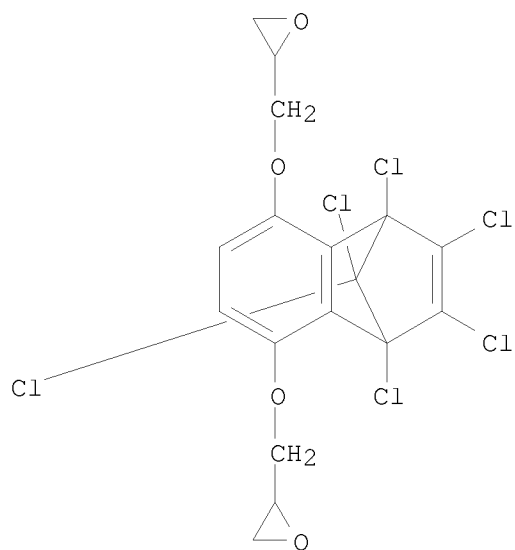
RN 30111-35-4 CAPLUS

CN 5-Norbornene-2,3-dicarboxylic anhydride, 1,4,5,6,7,7-hexachloro-, polymer  
with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and  
1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-1,4-dihydro-1,4-  
methanonaphthalene (8CI) (CA INDEX NAME)

CM 1

CRN 6019-59-6

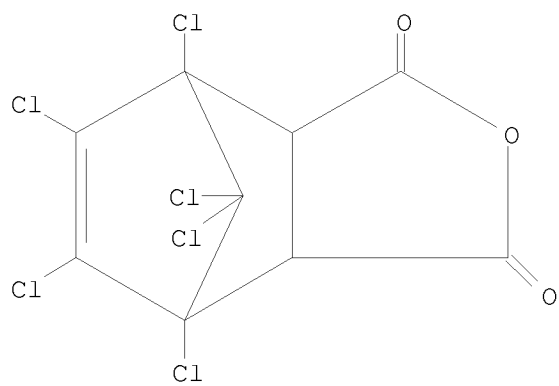
CMF C17 H12 Cl6 O4



CM 2

CRN 115-27-5

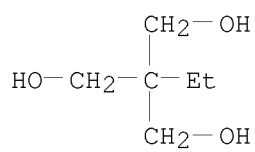
CMF C9 H2 Cl6 O3



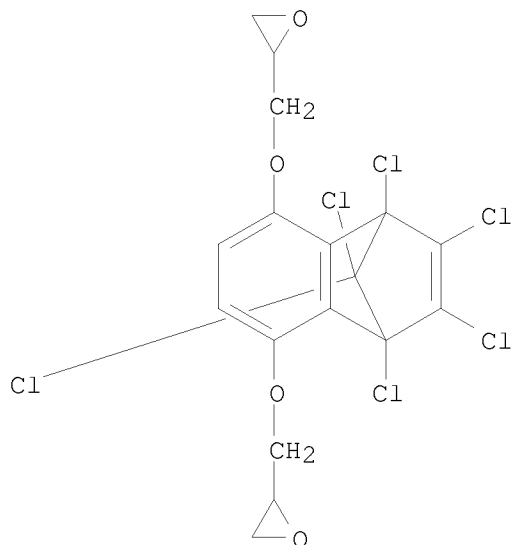
CM 3

CRN 77-99-6

CMF C6 H14 O3



IT 6019-59-6P  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 6019-59-6 CAPLUS  
 CN 1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro-5,8-bis(2,3-epoxypropoxy)-  
 1,4-dihydro- (7CI, 8CI) (CA INDEX NAME)



=> s 16 and norbornane  
 2835 NORBORNANE  
 L7 1 L6 AND NORBORNANE

=> d bib abs hitstr

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:1154689 CAPLUS  
 DN 142:75740  
 TI Curable polycyclic compounds and process for the production  
 thereof  
 IN Takenaka, Junji; Yamamoto, Hiromasa; Tanaka, Kenji  
 PA Tokuyama Corporation, Japan  
 SO PCT Int. Appl., 88 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004113313	A1	20041229	WO 2004-JP8959	20040618
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,				

NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,  
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,  
 SN, TD, TG

JP 2005146253 A 20050609 JP 2004-180123 20040617  
 EP 1637526 A1 20060322 EP 2004-746428 20040618

R: DE, ES, FR, GB, IT

CN 1809548 A 20060726 CN 2004-80017325 20040618  
 US 20060252911 A1 20061109 US 2005-560794 20051215

PRAI JP 2003-175754 A 20030620  
 JP 2003-324162 A 20030917  
 JP 2003-324268 A 20030917  
 JP 2003-358270 A 20031017  
 JP 2003-359205 A 20031020  
 WO 2004-JP8959 W 20040618

OS MARPAT 142:75740

AB Polycyclic compds. such as derivs. of adamantanes and norbornanes having  
 terminal glycidyl groups and oxetanylmethyloxy groups are prepared and  
 cured. Thus, 1,3-adamantanediol reacted with  
 3-ethyl-3-p-toluenesulfonyloxymethyloxetane to give  
 1,3-bis[(3-ethyloxetan-3-yl)methoxy]adamantane which was hardened with  
 3-methylhexahydrophthalic anhydride.

IT 815642-84-3P  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM  
 (Technical or engineered material use); PREP (Preparation); RACT (Reactant  
 or reagent); USES (Uses)  
 (curable polycyclic compds. having terminal glycidyl groups  
 and oxetanylmethyloxy groups)

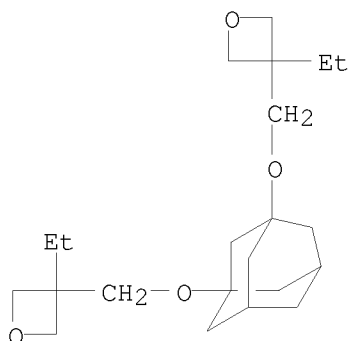
RN 815642-84-3 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-, polymer with  
 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxymethylene)]bis[oxirane] and  
 3,3'-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diylbis(oxymethylene)]bis[3-  
 ethyloxetane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-16-1

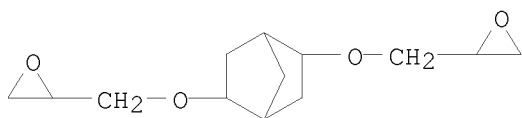
CMF C22 H36 O4



CM 2

CRN 19249-26-4

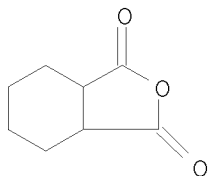
CMF C13 H20 O4



CM 3

CRN 85-42-7

CMF C8 H10 O3



IT 815642-63-8P 815642-65-0P 815642-67-2P

815642-69-4P 815642-71-8P 815642-79-6P

815642-82-1P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(curable polycyclic compds. having terminal glycidyl groups and oxetanylmethyloxy groups)

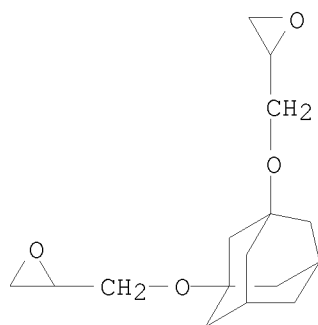
RN 815642-63-8 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with 2,2'-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diylbis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-24-1

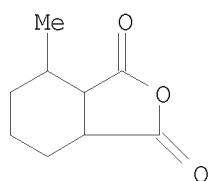
CMF C16 H24 O4



CM 2

CRN 57110-29-9

CMF C9 H12 O3



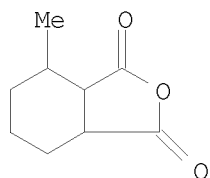
RN 815642-65-0 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxymethylene)]bis[oxirane] (9CI)  
 (CA INDEX NAME)

CM 1

CRN 57110-29-9

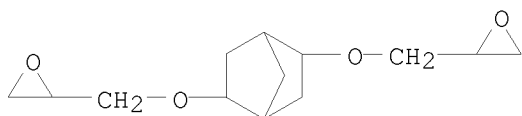
CMF C9 H12 O3



CM 2

CRN 19249-26-4

CMF C13 H20 O4



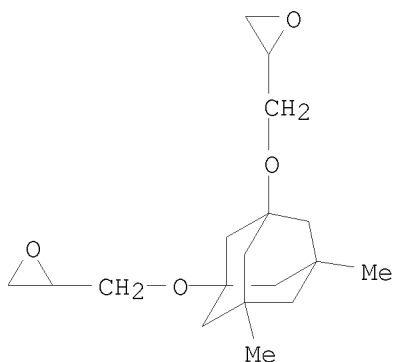
RN 815642-67-2 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2'-[(5,7-dimethyltricyclo[3.3.1.13,7]decane-1,3-  
diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-27-4

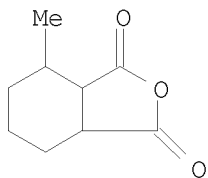
CMF C18 H28 O4



CM 2

CRN 57110-29-9

CMF C9 H12 O3



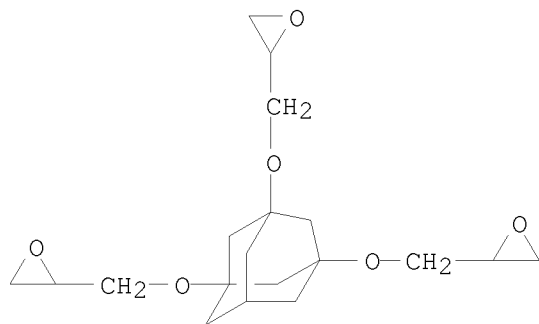
RN 815642-69-4 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2',2''-[tricyclo[3.3.1.13,7]decane-1,3,5-  
trilyltris(oxymethylene)]tris[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-29-6

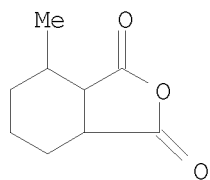
CMF C19 H28 O6



CM 2

CRN 57110-29-9

CMF C9 H12 O3



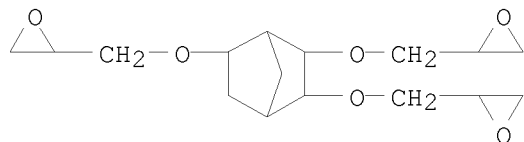
RN 815642-71-8 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2',2''-[bicyclo[2.2.1]heptane-2,3,5-  
trityltris(oxymethylene)]tris[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-32-1

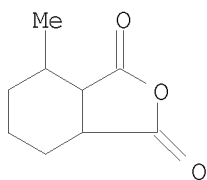
CMF C16 H24 O6



CM 2

CRN 57110-29-9

CMF C9 H12 O3



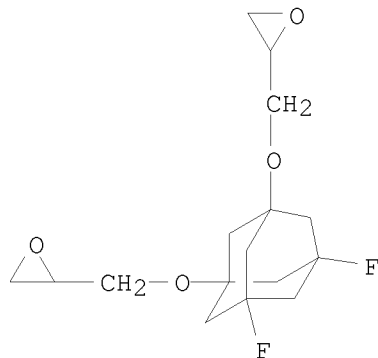
RN 815642-79-6 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2'-[(5,7-difluorotricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-  
diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-46-7

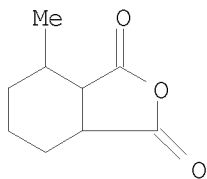
CMF C16 H22 F2 O4



CM 2

CRN 57110-29-9

CMF C9 H12 O3

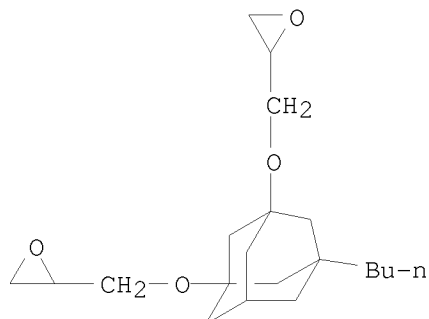


RN 815642-82-1 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2'-[(5-butyltricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-  
diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

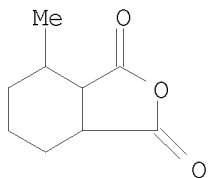
CM 1

CRN 815642-81-0  
CMF C20 H32 O4

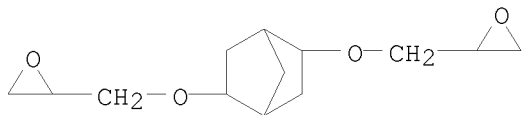


CM 2

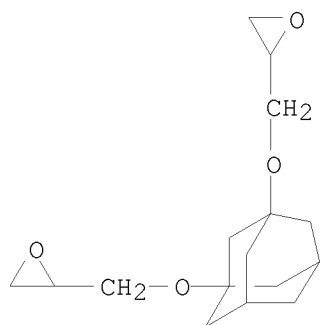
CRN 57110-29-9  
CMF C9 H12 O3



IT 19249-26-4P 815642-24-1P 815642-27-4P  
815642-29-6P 815642-32-1P 815642-46-7P  
815642-52-5P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(curable polycyclic compds. having terminal glycidyl groups  
and oxetanylmethoxy groups)  
RN 19249-26-4 CAPLUS  
CN Oxirane, 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxymethylene)]bis- (9CI)  
(CA INDEX NAME)

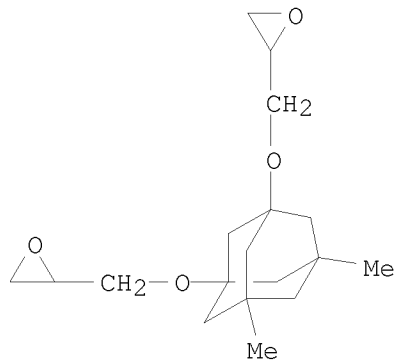


RN 815642-24-1 CAPLUS  
CN Oxirane, 2,2'-[tricyclo[3.3.1.1.3,7]decane-1,3-diylbis(oxymethylene)]bis-  
(CA INDEX NAME)



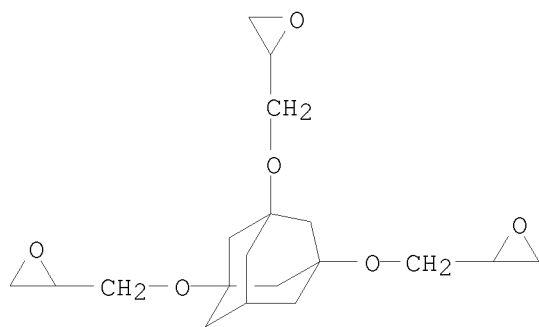
RN 815642-27-4 CAPLUS

CN Oxirane, 2,2'-[(5,7-dimethyltricyclo[3.3.1.1.3,7]decane-1,3-diyl)bis(oxymethylene)]bis- (CA INDEX NAME)



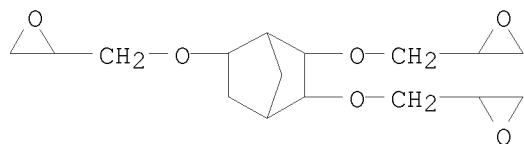
RN 815642-29-6 CAPLUS

CN Oxirane, 2,2',2'''-[tricyclo[3.3.1.1.3,7]decane-1,3,5-triyltris(oxymethylene)]tris- (CA INDEX NAME)



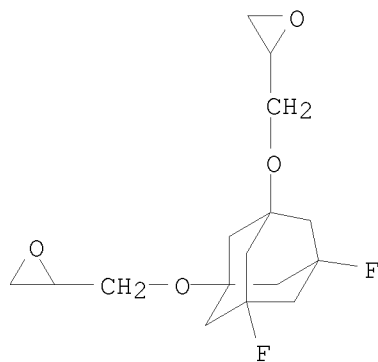
RN 815642-32-1 CAPLUS

CN Oxirane, 2,2',2'''-[bicyclo[2.2.1]heptane-2,3,5-triyltris(oxymethylene)]tris- (9CI) (CA INDEX NAME)



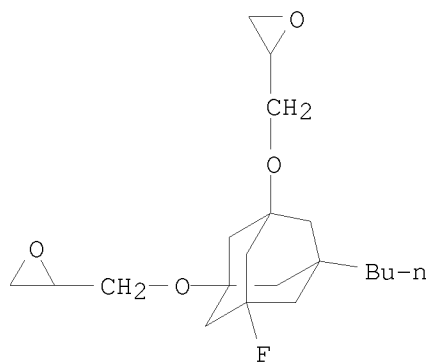
RN 815642-46-7 CAPLUS

CN Oxirane, 2,2'-[(5,7-difluorotricyclo[3.3.1.1.3,7]decane-1,3-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 815642-52-5 CAPLUS

CN Oxirane, 2,2'-[(5-butyl-7-fluorotricyclo[3.3.1.1.3,7]decane-1,3-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s 15 and norbornane

2835 NORBORNANE

L8 2 L5 AND NORBORNANE

=> d 1-2 bib abs hitstr

L8 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:1154689 CAPLUS  
 DN 142:75740  
 TI Curable polycyclic compounds and process for the production thereof  
 IN Takenaka, Junji; Yamamoto, Hiromasa; Tanaka, Kenji  
 PA Tokuyama Corporation, Japan  
 SO PCT Int. Appl., 88 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

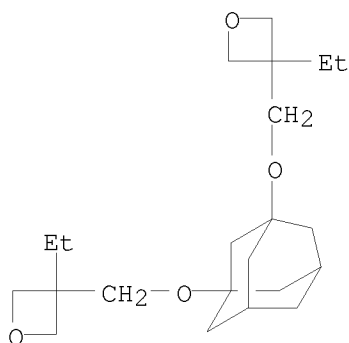
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004113313	A1	20041229	WO 2004-JP8959	20040618
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	JP 2005146253	A	20050609	JP 2004-180123	20040617
	EP 1637526	A1	20060322	EP 2004-746428	20040618
	R: DE, ES, FR, GB, IT				
	CN 1809548	A	20060726	CN 2004-80017325	20040618
	US 20060252911	A1	20061109	US 2005-560794	20051215
PRAI	JP 2003-175754	A	20030620		
	JP 2003-324162	A	20030917		
	JP 2003-324268	A	20030917		
	JP 2003-358270	A	20031017		
	JP 2003-359205	A	20031020		
	WO 2004-JP8959	W	20040618		
OS	MARPAT 142:75740				
AB	Polycyclic compds. such as derivs. of adamantanes and norbornanes having terminal glycidyl groups and oxetanylmethyloxy groups are prepared and cured. Thus, 1,3-adamantanediol reacted with 3-ethyl-3-p-toluenesulfonyloxymethyloxetane to give 1,3-bis[(3-ethyloxetan-3-yl)methoxy]adamantane which was hardened with 3-methylhexahydrophthalic anhydride.				
IT	815642-84-3P				
	RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (curable polycyclic compds. having terminal glycidyl groups and oxetanylmethyloxy groups)				
RN	815642-84-3 CAPLUS				
CN	1,3-Isobenzofurandione, hexahydro-, polymer with 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxymethylene)]bis[oxirane] and 3,3'-[tricyclo[3.3.1.1 <sup>3,7</sup> ]decane-1,3-diylbis(oxymethylene)]bis[3-				

ethyloxetane] (9CI) (CA INDEX NAME)

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CRN 815642-16-1

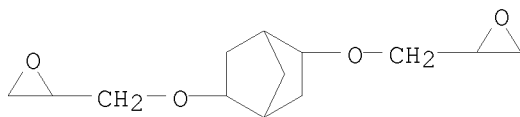
CMF C22 H36 O4



CM 2

CRN 19249-26-4

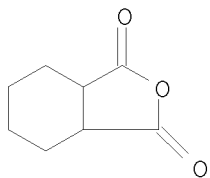
CMF C13 H20 O4



CM 3

CRN 85-42-7

CMF C8 H10 O3



IT 815642-63-8P 815642-65-0P 815642-67-2P  
815642-69-4P 815642-71-8P 815642-79-6P  
815642-82-1P

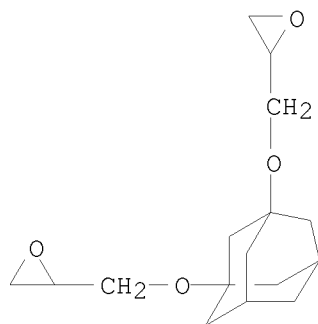
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(curable polycyclic compds. having terminal glycidyl groups and

oxetanylmethyloxy groups)  
 RN 815642-63-8 CAPLUS  
 CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
 2,2'-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diylbis(oxymethylene)]bis[oxirane]  
 (9CI) (CA INDEX NAME)

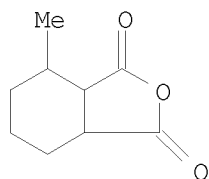
CM 1

CRN 815642-24-1  
 CMF C16 H24 O4



CM 2

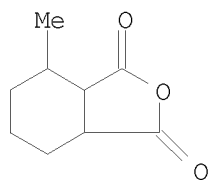
CRN 57110-29-9  
 CMF C9 H12 O3



RN 815642-65-0 CAPLUS  
 CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxymethylene)]bis[oxirane] (9CI)  
 (CA INDEX NAME)

CM 1

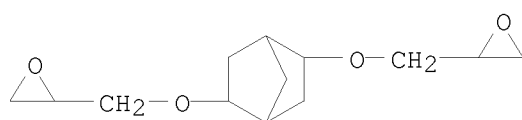
CRN 57110-29-9  
 CMF C9 H12 O3



CM 2

CRN 19249-26-4

CMF C13 H20 O4



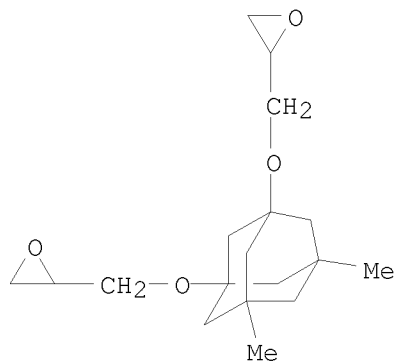
RN 815642-67-2 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2'-[(5,7-dimethyltricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-  
diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-27-4

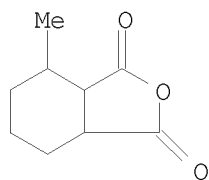
CMF C18 H28 O4



CM 2

CRN 57110-29-9

CMF C9 H12 O3

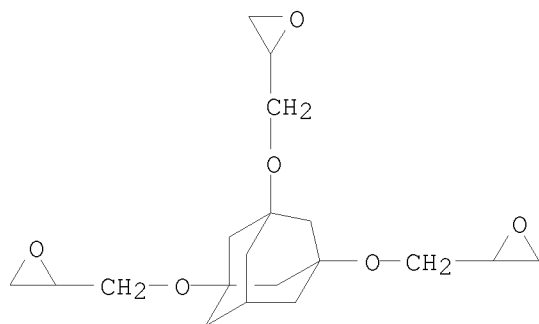


RN 815642-69-4 CAPLUS  
 CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
 2,2',2''-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5-  
 triyltris(oxymethylene)]tris[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-29-6

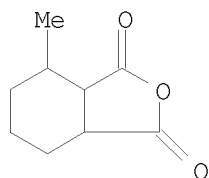
CMF C19 H28 O6



CM 2

CRN 57110-29-9

CMF C9 H12 O3

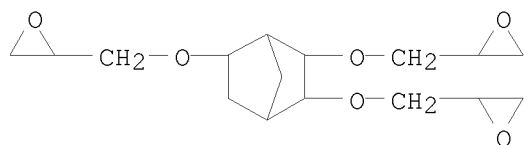


RN 815642-71-8 CAPLUS  
 CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
 2,2',2''-[bicyclo[2.2.1]heptane-2,3,5-  
 triyltris(oxymethylene)]tris[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-32-1

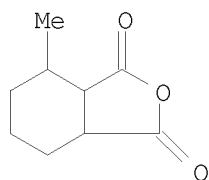
CMF C16 H24 O6



CM 2

CRN 57110-29-9

CMF C9 H12 O3



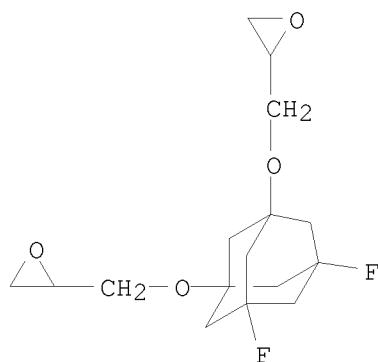
RN 815642-79-6 CAPLUS

CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
2,2'-[(5,7-difluorotricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-  
diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 815642-46-7

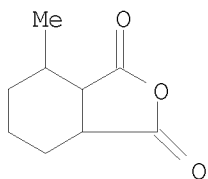
CMF C16 H22 F2 O4



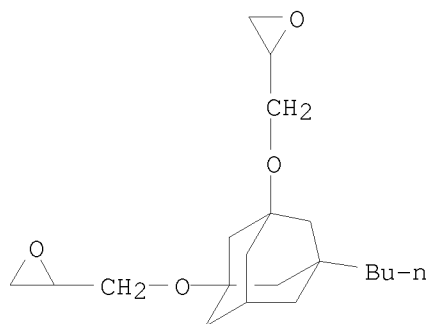
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CRN 57110-29-9

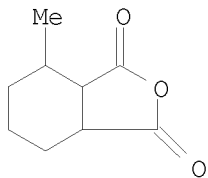
CMF C9 H12 O3



RN 815642-82-1 CAPLUS  
 CN 1,3-Isobenzofurandione, hexahydro-4-methyl-, polymer with  
 2,2'-[(5-butyltricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-  
 diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 815642-81-0  
 CMF C20 H32 O4



CM 2  
 CRN 57110-29-9  
 CMF C9 H12 O3

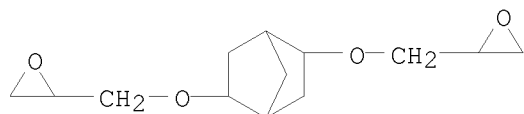


IT 19249-26-4P 815642-24-1P 815642-27-4P  
 815642-29-6P 815642-32-1P 815642-46-7P  
 815642-52-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (curable polycyclic compds. having terminal glycidyl groups and

oxetanylmethoxy groups)

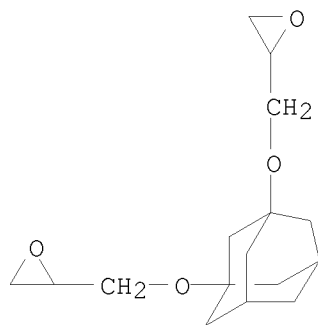
RN 19249-26-4 CAPLUS

CN Oxirane, 2,2'-[bicyclo[2.2.1]heptane-2,5-diylbis(oxymethylene)]bis- (9CI)  
(CA INDEX NAME)



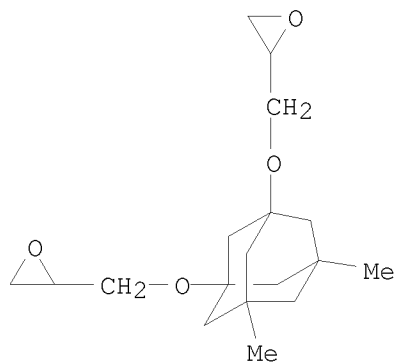
RN 815642-24-1 CAPLUS

CN Oxirane, 2,2'-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diylbis(oxymethylene)]bis-  
(CA INDEX NAME)



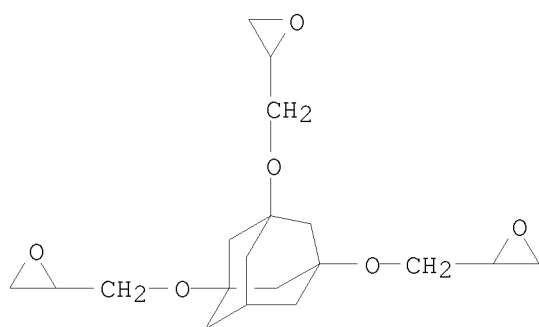
RN 815642-27-4 CAPLUS

CN Oxirane, 2,2'-[(5,7-dimethyltricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3-diyl)bis(oxymethylene)]bis- (CA INDEX NAME)

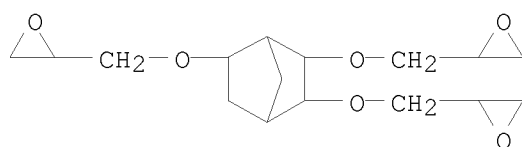


RN 815642-29-6 CAPLUS

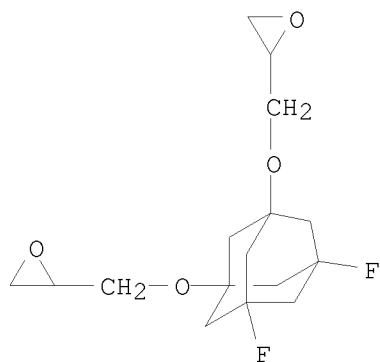
CN Oxirane, 2,2',2''-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5-triyltris(oxymethylene)]tris- (CA INDEX NAME)



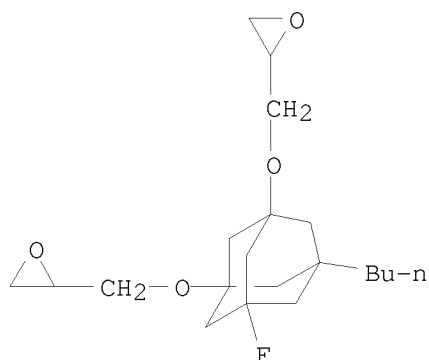
RN 815642-32-1 CAPLUS  
 CN Oxirane, 2,2',2''-[bicyclo[2.2.1]heptane-2,3,5-triyltris(oxymethylene)]tris- (9CI) (CA INDEX NAME)



RN 815642-46-7 CAPLUS  
 CN Oxirane, 2,2'-[(5,7-difluorotricyclo[3.3.1.1.3,7]decane-1,3-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 815642-52-5 CAPLUS  
 CN Oxirane, 2,2'-[(5-butyl-7-fluorotricyclo[3.3.1.1.3,7]decane-1,3-diyl)bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:435987 CAPLUS

DN 129:109731

OREF 129:22539a,22542a

TI Norbornane cyclic carbonate-containing epoxy resin compositions  
and their cured products with dimensional stability

IN Murayama, Mitsumoto; Mita, Fumio; Endo, Takeshi

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

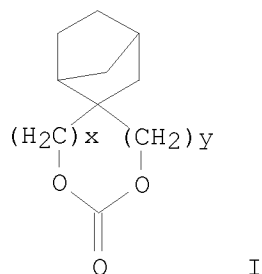
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 10182812	A	19980707	JP 1996-344284	19961224
PRAI	JP 1996-344284		19961224		
OS	MARPAT 129:109731				
GI					



AB The compns. comprise norbornane cyclic carbonates I (x, y = 0-3), epoxy resins, and amine-based anionic ring-opening polymerization initiators. Thus, a cured product from a composition containing I (x, y = 1) 30,

YX 4000H 68, and DBU 2 parts showed tensile shear strength >5 kg/mm<sup>2</sup>, thermal expansion coefficient  $9.0 \times 10^{-5}$  degree<sup>-1</sup>, volume expansion rate 1.0%, and 10% weight reduction temperature 330°.

IT 210046-16-5P 210046-19-8P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(norbornane cyclic carbonate-containing epoxy resin compns. to give cured products with dimensional stability and no shrinkage)

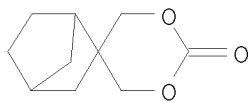
RN 210046-16-5 CAPLUS

CN Spiro[bicyclo[2.2.1]heptane-2,5'-[1,3]dioxan]-2'-one, polymer with 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 198197-09-0

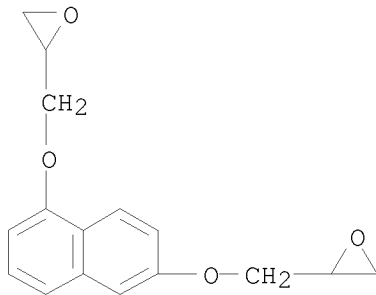
CMF C10 H14 O3



CM 2

CRN 27610-48-6

CMF C16 H16 O4



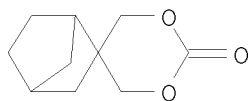
RN 210046-19-8 CAPLUS

CN Spiro[bicyclo[2.2.1]hept-5-ene-2,5'-[1,3]dioxan]-2'-one, polymer with 2,2'-[1,6-naphthalenediylbis(oxymethylene)]bis[oxirane], spiro[bicyclo[2.2.1]heptane-2,5'-[1,3]dioxan]-2'-one and 2,2'-[(3,3',5,5'-tetramethyl[1,1'-biphenyl]-4,4'-diyl)bis(oxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 198197-09-0

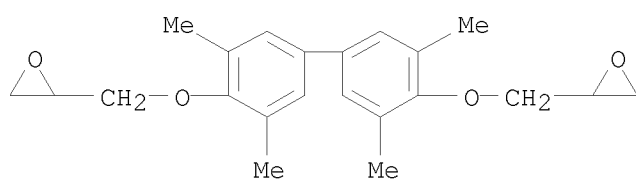
CMF C10 H14 O3



CM 2

CRN 85954-11-6

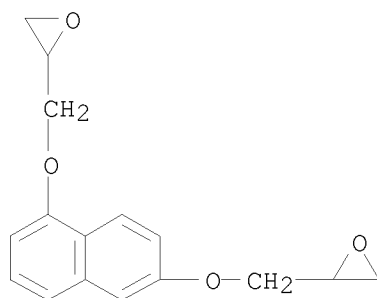
CMF C22 H26 O4



CM 3

CRN 27610-48-6

CMF C16 H16 O4



CM 4

CRN 7363-94-2

CMF C10 H12 O3

